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ABSTRACT

This student text is designed for use by Air Force personnel enrolled in a self-study extension course for meat cutters. Covered in the individual chapters are careers in meat processing, operation and maintenance of meat cutting equipment, receipt and storage, procedures for processing and preparing meats, techniques for wrapping and pricing retail meat cuts, guidelines for grading and cooking meats, and meat department management. Each chapter contains a series of lessons and exercises at the end of each lesson. Answers to the exercises and a volume review exercise are provided. (MN)

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MEATCUTTER

(AFSC 61250)

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6125	MEATCUTTER (AFSC 61250)	10 May 85

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ITEM	TYPE	DESIGNATION OR TITLE	INVENTORY CONTROL NUMBER	VRE ANSWER SHEET IDENTIFICATION
3	VOL	VOL 1, Meatcutter	6125 01 8212	
4	VRE	VOLUME REVIEW EXERCISE (VOL 1)	6125 01 01	6125 01 01

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COURSE NUMBER	
6125	CAREER FIELDS, POLICIES, PROCEDURES AND EQUIPMENT CHANGE. ALSO, ERRORS OCCASIONALLY GET INTO PRINT. THE FOLLOWING ITEMS UPDATE AND CORRECT YOUR COURSE MATERIALS. PLEASE MAKE THE INDICATED CHANGES.
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1. CHANGES FOR THE TEXT: VOLUME 1

a. Page iii, Preface, lines 7-8: Change "MSgt Anthony Troino" to "TSgt Michael W. Blac' ell." Line 9: Change "926-3726" to "926-3746."

b. Page 5, Figure 1-2: Delete. Col 1, lines 6-last: Delete "1-3. Publications . . . step-by-step." Col 2, lines 1-last: Delete "performance of a . . . a portion of."

c. Page 6: Delete page in its entirety.

d. Page 18, col 2, line 1: Delete "operating" and change "at least twice" to "three times." Line 2: After "beginning" add a comma and change "of the day" to "middle." Line 5: After "charts" delete "are." Line 7: Delete "twice-."

e. Page 37, col 2, line 1: Before "Round" insert "k."

f. Page 44, col 2, line 12: Change "four" to "five." Lines 13-14: change "fourth and fifth" to "fifth and sixth."

g. Page 98, col 2, line 13 fr bot: Delete "or she." Line 9 fr bot: Change "supply" to "supplies." Last line: Delete "normally not to exceed 30 days consumption in."

h. Page 99, col 1, line 1: Delete "the continental United States (CONUS)." Exercises (048)-3: Delete.

i. Page 102, col 1, line 21: Change "34" to "35." Line 26: Change "fresh fish . . . after receipt" to "any fish remaining 4 days after the processing date."

j. Page 109, col 1, line 4 fr bot: Change ".13" to ".125 hundreths of a."

k. Page 110, col 1, lines 6-7 fr bot: Change "1 tenth of 1 percent" to ".4 percent of sales."

l. Page 113, answers 004-1 thru 4: Delete. Answers 015-1 and 015-2: Move to below answer 014-7.

m. Page 114, answer 023-2: Change "F. Fourth and fifth rib" to "T." Answer 024-5: Change "024-5" to "025-5."

n. Page 115, answers 034-2 and 3: Switch answers for "034-2" with "034-3." Then, for answer "034-3" after "F." add "On the second day, they are sold chilled, and after the second day, they are discarded." Answer 047-4: Before "grinders" delete the "4" and change "(5)" to "(4)" and "(6)" to "(5)." Answer 048-3: Delete. Answer 050-1: After "d. Meat" add "e. Meat."

o. Page 116, answer 054-3: After "054-3" add ".125 hundreths of a pound."

LIST OF CHANGES

COURSE NUMBER	CAREER FIELDS, POLICIES, PROCEDURES AND EQUIPMENT CHANGE. ALSO, ERRORS OCCASIONALLY GET INTO PRINT. THE FOLLOWING ITEMS UPDATE AND CORRECT YOUR COURSE MATERIALS. PLEASE MAKE THE INDICATED CHANGES.
6125	
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2. CHANGES FOR THE VOLUME REVIEW EXERCISE: VOLUME 1

a. Page 9, question 72: In the stem of the question, after "established" add "for."

b. The following questions are no longer scored and need not be answered: 5, 6, 7, 72, 79 and 81.

6125 01 8212

Course 6125

MEATCUTTER

(AFSC 61250)

Volume 1

Meatcutter

Extension Course Institute

Air Training Command

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THIS PUBLICATION HAS BEEN REVIEWED AND APPROVED BY COMPETENT PERSONNEL OF THE PREPARING COMMAND IN ACCORDANCE WITH CURRENT DIRECTIVES ON DOCTRINE, POLICY, ESSENTIALITY, PROPRIETY, AND QUALITY.

Preface

THIS ONE VOLUME course 6125, *Meatcutter*, provides the knowledge you will need as a meatcutter assigned to an Air Force commissary. It presents directions, problems, and explanations that will teach you much of what you need to know to do your job. Chapter 7 refers to the managerial functions in a meat department.

Code numbers appearing on figures are for preparing agency identification only.

Direct your questions or comments relating to the accuracy or currency of this volume to the course author: Lowry Technical Training Center/TTGX, ATTN: MSgt ~~Anthony~~ Michael W. Blackwell ~~Frank~~, Lowry AFB Colorado 80230. If you need an immediate response, call the author, AUTOVON 926-37~~4~~6, between 0800 and 1600 MST, Monday through Friday. *(NOTE: Do not use the suggestion program to submit changes or corrections for this course.)*

If you have any questions on course enrollment or administration, or on any of ECI's instructional aids (Your Key to a Successful Course, Behavioral Objective Exercises, Volume Review Exercise, and Course Examination), consult your education officer, training officer, or NCO, as appropriate. If this person can't answer your questions, send them to ECI, Gunter AFS AL 36118, preferably on ECI Form 17, Student Request for Assistance.

This volume is valued at 24 hours (8 points).

Material in this volume is technically accurate, adequate, and current as of June 1982.

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NOTE: In this volume, the subject matter is developed by a series of Learning Objectives. Each of these carries a 3-digit number and is in boldface type. Each sets a learning goal for you. The text that follows the objective gives you the information you need to reach that goal. The exercises following the information give you a check on your achievement. When you complete them, see whether your answers match those in the back of this volume. If your response to an exercise is incorrect, review the objective and its text.

A Career in Meat Processing

THE MEAT PROCESSING ladder of the Subsistence Operations career field is a very important function of the Air Force Commissary Service (AFCOMS). Because of rising prices, customers choose their meats very carefully when shopping at the commissary. Consequently, AFCOMS has put lots of emphasis in the training of commissary meatcutters. As a meatcutter, you may be required to perform many tasks, such as designing a meat department in a commissary store; receiving and storing meat; processing beef, veal, lamb, and pork for retail sales; and displaying meat properly in display cases. You must know how to use the handtools and powered equipment safely, and be able to assign work and evaluate the performance of subordinates. Meatcutting is a skill which requires careful study.

Before we discuss meatcutting in detail, you must give attention to several other important factors you are required to know in order to advance in the meat processing career field. Where do you fit in? What are the specific steps in your advancement? What are the specialties in the meat processing career ladder, and what are the duties of these specialties? The answers to these questions are important to you as you progress up the career ladder.

This chapter discusses your responsibilities within the Meat Processing career field and the specific steps you need to complete to advance up the meat processing ladder. You will also learn how to use the manuals and regulations that give the procedures and requirements for doing your job properly.

1-1. Your Career Field

Air Force jobs are divided into career fields, and all career fields are numbered. A career field is described as a group of related Air Force specialties that have similar knowledges and skills. An Air Force specialty (AFS) is a grouping of positions that require common qualifications and is identified by a title and code. An Air Force specialty code (AFSC) is a combination of meaningful digits that identify an AFS. All AFSCs change as you progress up the career ladder in your career field. There are two career ladders in the Subsistence Operations career field. How does your AFSC fit in?

001. Correlate the AFSC titles in the subsistence operations and the meat cutter career fields with their related career levels.

Career Ladders. A career ladder is a vertical arrangement of an AFS to show skill levels and progression. Examine figure 1-1, Subsistence Operations Career Field Chart. Note the two career ladders in the Subsistence Operations career field. The one on the left is subsistence operations. The one on the right is meat processing—your ladder.

Subsistence operations ladder. In the subsistence operations ladder are the following skill levels: 61211, Subsistence Operations Helper (fig. 1-1, bottom left); 61231, Apprentice Subsistence Operations Specialist (center left); 61251, Subsistence Operations Specialist (just above the apprentice); 61271, Subsistence Operations Technician (top left); 61299, Subsistence Operations Superintendent (second from the top center) and 61200 Subsistence Manager (top center).

The subsistence operations ladder provides the opportunity for airmen in that specialty to progress. They will be assigned to the commissary retail store or troop subsistence support activities. Regardless of the activity to which subsistence operations specialists are assigned, they should strive to progress up their career ladder.

Meat Processing Ladder. In the meat processing ladder, the skill levels are: 61210, Meatcutting Helper (fig. 1-1, bottom right); 61230, Apprentice Meatcutter (center right); 61250, Meatcutter (just above the apprentice block); 61270, Meat Processing Supervisor (top right); 61299, Subsistence Operations Superintendent (second from the top center); and 61200, Subsistence Manager (top center).

Notice in figure 1-1 that once you progress to the 61270 or 61271, the two career ladders merge at the 61299 skill level. Therefore, you can see the importance of being familiar with both ladders.

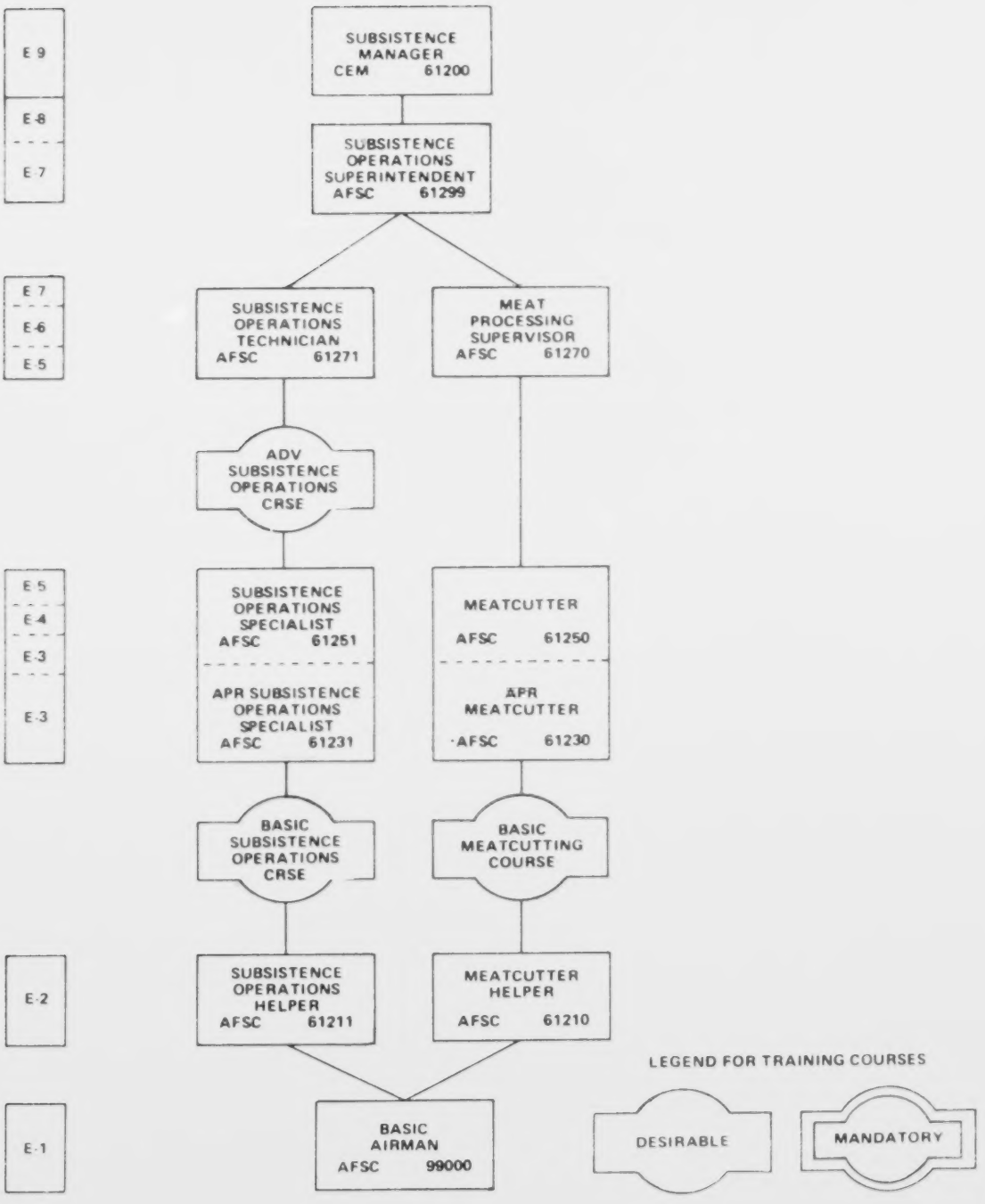

Figure 1-1. Subsistence Oprations Career Field Chart.

You are assigned to the meat processing ladder. You have the opportunity to progress as you perform your tasks in the commissary meat department. Your success and career progression will depend, to a large degree, upon the effort that you put into preparing for your job and doing it well. After completing the following exercise, we will discuss the meat processing ladder in detail and then take up your progression within the Meat Processing career field.

Exercises (001):

1. Match each AFSC title in column B with its related AFSC number in column A. Each column B item may be used only once.

Column A	*Column B*
____ (1) 61231.	a. Apprentice Subsistence Operations Specialist.
____ (2) 61251.	b. Meat Processing Supervisor.
____ (3) 61271.	c. Apprentice Meatcutter.
____ (4) 61230.	d. Meatcutter.
____ (5) 61250.	e. Subsistence Operations Technician.
____ (6) 61270.	f. Subsistence Operations Specialist.

1-2. Meat Processing Ladder

In this section, we will examine the meat processing ladder in detail, listing the requirements for the award of AFSC 61250 or progressing steps. In addition, we will give the duties and responsibilities of the meatcutter and the meat processing supervisor, beginning with the progression steps.

002. Cite the specific requirements for award of AFSC 61250 and state the factors which most influence your career progression.

Requirements for Award of AFSC 61250. Since your progression from 61230 to 61250 is your concern at the moment, we shall discuss the requirements for award of the 5-level AFSC. You must satisfactorily perform in the 5-skill-level position for 6 months or more, must successfully complete this course, and must be recommended for upgrading by your supervisor.

Bear in mind that your career progression is greatly influenced by your individual efforts to attain and maintain qualifications and to enhance your military knowledge. Your self-improvement may be accomplished through completion of career development courses from the Extension Course Institute (ECI) and off-duty education courses. Check with your base education office for further details concerning enrollment in such courses. Thus, we complete our summary of career progression from the 3 to 5 skill level. Next, we shall examine two specialty descriptions for the meatcutter and the meat processing supervisor which appear in AFR 39—1, *Airman Classification Regulation*.

Exercises (002):

1. What are the specific requirements for the award of AFSC 61250?

2. What factor most greatly influences your career progression?

003. Specify the sections of a specialty description and to whom the 61230 specialty description applies; Associate AFSCs 61230, 61250, and 61270 with statements about them.

Specialty Descriptions. Each specialty description consists of (1) the specialty summary section, (2) the duties and responsibilities section, and (3) the specialty qualifications section. Let's spend a few moments discussing these three sections as they apply to your specialty.

Meatcutter. The specialty description for the meatcutter applies to AFSCs 61210 (helper), 61230 (apprentice), and 61250 (meatcutter). The duties for these different skill levels do not vary a great deal as you progress up the career ladder; however, the duties must be performed at a higher level as you achieve the different AFSC skill levels.

Shown below is the complete specialty description for the meatcutter. Remember, this listing also applies to the apprentice, such as yourself.

Meatcutter

(AFSC 61250; Semiskilled AFSC 61230; Helper AFSC 61210)

1. Specialty Summary:

Separates into standard cuts and weights, wraps, prices, merchandises beef, veal, lamb, pork, and poultry.

Related DOD Occupational Subgroup: 800.

2. Duties and Responsibilities:

a. Cuts and prepares meat and poultry. Processes cuts of beef, veal, lamb, and pork. Bones and prepares cuts for roasts, steaks, chops, ground meat, and stew meats. Prepares retail cuts for sale in commissary. Salvages bone, fat, and unusable trim, and disposes according to prescribed directives.

b. Stores meat, fish, and poultry. Stores carcasses, halves, quarters, dressed meat, fish, and poultry in refrigerators and holding rooms according to prescribed sanitary standards. Wraps, seals, weighs, prices, and displays retail cuts of meat in display cases for sale in commissary store.

c. Operates and cleans equipment and sharpens meatcutting tools. Operates bandsaws, grinders, mixers, slicers, tenderizers, and scales. Maintains cutting and boning knives, saws, and powered equipment.

d. Supervises meatcutting personnel. Assigns work and examines work performed. Evaluates performance of subordinates. Provides job proficiency instruction in techniques of meatcutting and in operation of equipment.

3. Specialty Qualifications:

a. Knowledge. Knowledge of meatcutting, including identification of types and grades of meat and meatcutting, and techniques of merchandising is mandatory. Possession of mandatory knowledge will be determined according to AFR 35-1.

b. Education. Completion of high school with courses in biology is desirable.

c. Experience. Experience in functions such as cutting or storing meats is mandatory.

d. Training. Completion of a basic meatcutting course is desirable.

Note the related Department of Defense (DOD) occupational subgroup 800 in the specialty summary section above. *DOD occupational subgroups* are instruments for use in manpower management and in policy-planning studies on a DOD-wide basis.

We said that your career progression is greatly influenced by your efforts to become competent in your specialty. Refer again to the specialty qualifications for AFSC 61230.50 and notice that three qualifications are mandatory; in other words, they must be met before you can be awarded the specialty. In addition, you see several knowledge, education, and training qualifications that are desirable. Attainment of each desirable qualification increases your chances for success. Thus, you were furnished firm guidelines for future development in your chosen career field.

Meat processing supervisor. To give you an idea of your future responsibilities, the specialty description for the meat processing supervisor is shown below.

Meat Processing Supervisor

(AFSC 61230)

1. Specialty Summary.

Supervises operation of commissary meat department.

Related DOD Occupational Subgroup: 800.

2. Duties and Responsibilities.

a. Plans and schedules meat processing activities. Plans for use of available space and arranges meat department equipment to attain maximum efficiency and safety precautions. Plans and coordinates meat purchases and receipt to insure adequate stocks are available at all times. Schedules workload and establishes performance standards and production controls. Improves methods and procedures for economy of operation. Accounts for supplies and equipment charged to meat department activity. Recommends organization and staffing required to perform assigned functions.

b. Supervises meat processing personnel. Assigns work to subordinates such as cutting, storing, pricing, wrapping, displaying, maintaining tools and equipment, and cleaning work and storage area. Inspects completed work for compliance with instructions and approved meat department standards.

c. Establishes and conducts on-the-job training for meat processing personnel. Determines group and individual needs for instruction and establishes or arranges for required job proficiency training. Instructs subordinates on work methods and new methods developed. Conducts classes, demonstrations, and job proficiency training and recommends formal training.

d. Inspects and evaluates meat processing activities. Inspects meat and supplies received for condition and quality. Inspects assigned personnel for cleanliness. Inspects meatcutting, pricing, wrapping, and displaying. Inspects refrigeration rooms, tools, and equipment for condition and sanitation. Corrects substandard conditions noted. Evaluates effectiveness of operation through analysis of customer complaints, production charts, reports, and accounting records.

e. Performs technical meat processing functions. Interprets policy directives and other informational material. Performs cutting tests and determines retail selling prices. Directs scheduled and unscheduled inventories to determine gain and/or loss margins. Maintains previous sales records by day and/or peak period in order to anticipate potential sales. Determines amount of meats to be placed on sale and directs subordinates accordingly. Maintains informal working files for total meat operation. Resolves customer problems.

3. Specialty Qualification.

a. Knowledge. Knowledge of type, grades, and cuts of meats; fundamentals of merchandising and marketing; and property and monetary accounting is mandatory. Possession of mandatory knowledge will be determined according to AFR 35-1.

b. Experience. Qualification as a meatcutter is mandatory. In addition, experience in supervising functions such as operation of a commissary meat department is mandatory.

c. Training.

(1) Completion of prescribed 7-level management course is mandatory.

(2) Completion of retail selling and marketing courses is desirable.

You see from the above specialty description that the meat processing supervisor is a planner, trainer, technician and manager of resources. This 7-level individual plans and inspects meat department activities, supervises assigned personnel, directs training, and performs technical meat department functions. Refer once more to the specialty description and note the mandatory and desirable qualifications for the 7-level AFSC. Again, these qualifications are guidelines for your future development in the meat processing field.

Exercises (003):

1. List the sections included in each specialty description.

2. To whom does the meatcutter specialty description apply?

3. Match each descriptive statement in column B with either the specialty summary or the duty or responsibility in column A. Each item in column B may be used once or not at all.

Column A	*Column B*
____ (1) Specialty summary.	a. Salvages bone, fat, and trim.
____ (2) Duties and responsibilities.	b. Wraps, prices, stores, but does not merchandise beef, veal, lamb, pork, and poultry.
	c. Cuts whole carcasses of beef, veal, lamb, and pork into halves and quarters.
	d. Wraps, seals, weighs, and marks retail cuts of meat for sale in the commissary store.
	e. Separates [beef, veal, lamb, pork, and poultry] into standard cuts and weights.
	f. Operates and cleans equipment but does not sharpen meatcutting tools [apprentices do not do this last].
	g. Merchandises beef, veal, lamb, pork, and poultry.

1.3

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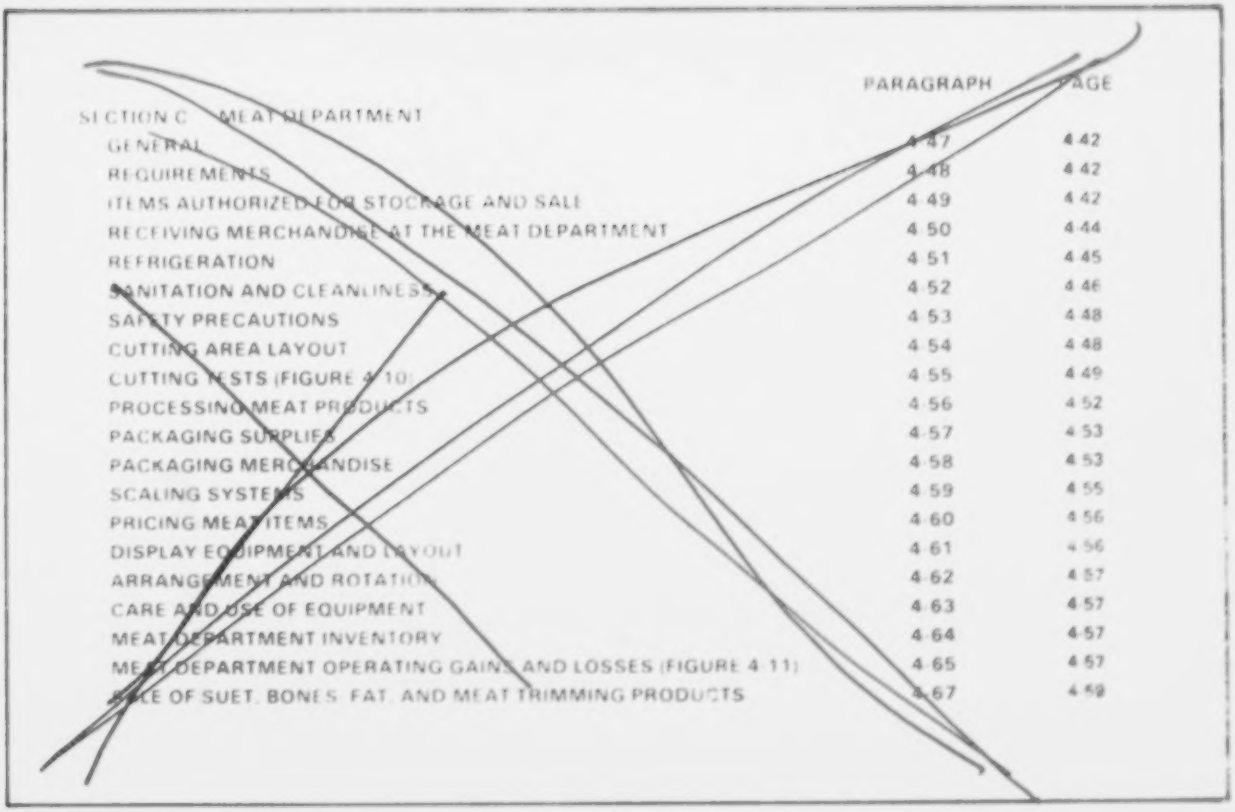

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Figure 1-2. Sample table of contents

4. The specialty description mentioned in exercise 2 includes what grade spread for AFSC 61250?

5. The specialty description for the meat processing supervisor lists what mandatory knowledge qualifications?

1-3. Publications

Many types of publications are used in the Air Force. There are technical orders which give information on maintenance or repair of equipment. There are Air Force regulations which set policy for operation of units, bases, commands, and the entire Air Force. Air Force manuals are used to establish permanent and detailed instructions, procedures, and techniques that tell operating personnel how to perform their duties. A manual may be general and deal with principles or doctrines, it may include material related to an entire function, or it may direct step-by-step performance of a specific task or tasks. It may even include policies or assign responsibilities.

You will be concerned primarily with Air Force Commissary Service (AFCOMS) Regulation 145-1, *General Organization and Responsibilities*, and AFCOMS Regulation 145-2, *Commissary Resale Operations*.

004. Identify regulations which cover commissary operations and responsibilities.

AFCOMS Regulation 145-1. AFCOMS Regulation 145-1 outlines the general organization and responsibilities of the Air Force Commissary Service. It is intended to give managers a better understanding of functions performed within AFCOMS and thereby enable them to function more efficiently in support of AFCOMS mission. This regulation is a valuable management tool for senior NCOs.

AFCOMS Regulation 145-2. This regulation covers the resale operations of commissaries. It is broken down into areas consisting of (a) general, (b) inventory, (c) requirements, and (d) individual store sections. You will find meat department section in Chapter 4, Section C.

Table of Contents. To locate information in manuals, use the of contents or index. Figure 1-2 shows a portion of

the table of contents from AFCOMS 145–2. It lists all items dealing with the meat department. Notice that Section C in the table of contents is entitled "Meat Department." As an example, the third topic under Section C is Items authorized for Stockage and Sale. From this topic, follow the dashed line to the right. You see the number 4–49 beneath the word "Paragraph." Just to the right of 4–49 you see the number 4–42 located under the word "page." These two numbers mean that information on items authorized for stockage and sale will be found on page 4–42, paragraph 4–49. To locate any item in the table of contents, find the paragraph and page numbers.

Exercises (004):

1. What regulation can managers use as a valuable management tool?

2. What regulation covers resale operations of commissaries?

3. Where would you find the regulation which covers the meat department section?

4. Using the table of contents sample shown in figure 1-2, list the paragraph and page on which you will find information on the following items:
   a. Cutting tests.

   b. Pricing meat items.

   c. Rotation of items.

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Operation and Maintenance of Meatcutting Equipment

SOME YEARS AGO an instructor at an Air Force school was operating a handsaw. He was not using the safety guard, because he was so sure of himself. He had only one more cut to make before completing his project. Suddenly, he let out a piercing yell. The blade had cut more than an inch into his hand between his thumb and index finger. Fortunately, the doctor at the hospital was able to sew up his wound. Some tendons were so severely damaged that it was 6 months before he could fully open his hand. This accident shows your great need to follow safety precautions.

In this chapter, we will discuss (a) handtools, (b) powered equipment, (c) sanitation, and (d) safety. Naturally you want to avoid such accidents as the one we just described. To do this, you must learn the proper procedures. When in doubt, ask experienced meatcutters or your supervisor before making false moves.

2-1. Handtools

In this section, we will talk about knives, knife pouches, the butcher's steel, handsaws, boning hooks, dough cutters, and sharpening stones. Each tool has its use.

005. Correlate handtools with their uses and characteristics.

Knives. You wil use knives more than any other handtool. Refer to figure 2-1 as we talk about each of them. Notice the differences in appearance, and try to understand why these differences are important.

Steak knives. Steak knives are long and broad (see fig. 2-1). This knife is used for cutting boneless cuts of meat, such as top round steaks and sirloin tip roasts. Notice that the bevel, the part slanting away from the edge, is wider than the bevel on the boning knife. This wider level permits cleaner, smoother cuts, resulting in steaks and roasts without jagged edges.

Boning knives. Look at the boning knife at the bottom of figure 2-1. It is shorter and has a narrow bevel. With this knife you can cut close and along bones, through joints, and trim and remove meat near bones. The narrow bevel on boning knives practically eliminates nicks by bones along the cutting edge.

Sharpening Stone. The sharpening stone is a multiple stone, having three sides (course, medium, and fine) mounted in a case with an oil reservoir in the base. Figure 2-2 shows a meatcutter sharpening a knife. To get a new stone in use, do three things: (1) place the new stone in oil for several hours, (2) fill the reservoir with oil, and (3) rotate the stone so that each side is properly oiled. Use only mineral oil, and change it frequently. Handle the stones carefully to prevent nicking and chipping.

Sharpening knives on stone. Refer again to figure 2-2. In this picture, the first stroke in knife sharpening has just been completed. Begin on a coarse stone by placing the heel of the knife at the upper end of the stone and then draw the whole blade, from heel to tip, across the full length of the stone. This sharpens one side of the blade. Now turn the knife over and start at the opposite side of the stone, drawing the knife across the full length of the stone, thus sharpening the other side of the blade. Repeat until you have the required feather edge; then perform the same steps on a finer stone (remember that the unit has course, medium, and fine stones). To provide a narrow bevel for a boning knife, hold the blade at a somewhat greater angle. Immediately after sharpening a knife, straighten the knife edge on the steel. To sharpen the knife smoothly and evenly and to provide uniform wear on the stone, draw the blade across the full length of the stone.

Butcher's Steel. The butcher's steel is a round, magnetized steel shaft with a handle and a guard between the handle and the steel. It is used only to straighten the cutting edge of knives. Refer to figures 2-3,A, B, and C as we discuss the instructions for using the butcher's steel.

Figure 2-3,A. Hold the steel in your left hand with the point upward and slightly away from your body. Place the heel of the blade against the far side of the steel, keeping the blade at the same angle as the bevel.

Figure 2-3,B. Bring the entire blade edge down across the steel toward your left hand with a quick, swinging motion of your wrist, so that the tip of the blade makes an arc crossing the steel near the guard. The entire length of the blade edge should pass lightly over the steel.

Figure 2-3,C. Bring the blade into position again, but with the opposite side of the blade edge against the rear side of the steel and at the same angle as before. Repeat the motion of your right wrist, again passing the entire blade edge over the steel. Repeat the complete operation until the knife cutting edge is straight.

Handsaw. The handsaw has a frame with a narrow, removable blade. Substitute a new blade when the old one becomes dull. Use the handsaw for cutting through bones. For instance, first slice the meat with a steak knife to near the bone, then saw through the bone and use the knife to complete the separation process.

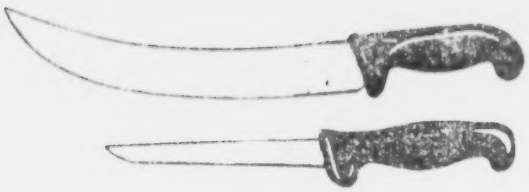

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Figure 2-1. Meatcutting knives.

Exercises (005):

1. Match each tool in column B with its appropriate characteristic in column A.

Column A	*Column B*
____ (1) Straightens knife edge.	a. Boning knife.
____ (2) Wide bevel.	b. Dough cutter.
____ (3) Holds meat steady while boning.	c. Butcher's steel.
____ (4) Trims around bones.	d. Steak knife.
____ (5) Keeps tools handy.	e. Boning hook.
____ (6) Scrapes table tops.	f. Handsaw.
____ (7) Cuts through bones.	g. Knife pouch.
____ (8) Use mineral oil.	h. Sharpening stone.
____ (9) Three sides.	

2-2. Powered Meatcutting Equipment

Powered meatcutting equipment includes meat grinders, meat slicers, tenderizers, and handsaws. Since these units are commercial machines, you may find that your machines vary in detail from the ones we will discuss. Consult manufacturer's manuals for details and variations. Operate these machines only under the supervision of an experienced meatcutter until you become proficient.

006. Identify various parts of powered meat equipment, and specify steps in the basic operation of selected pieces of this equipment.

Meat Grinder. The meat grinder is an electric power-operated machine for grinding boneless meat. It consists of two sections: (1) the power section and (2) the grinder section.

Power section. The main parts of the power section are the metal base, motor, gears, and drive shaft.

Boning Hook. This tool is a curved metal hook attached to a T-handle. Use the boning hook to hold meat steady during boning or breaking. The hook saves time and eliminates to a certain extent the danger of cutting yourself, since it enables you to secure a firm grip on the meat.

Dough Cutter. This tool is a thin piece of steel with a cleat handle across the full length of one side. Use the cutter to scrape the fat and meat particles from the top of meatcutting tables.

Knife Pouch. The knife pouch is a metal case that holds your knives and steel. Use a belt to strap the pouch to your waist and hand it on your working-hand side. The pouch serves a double purpose. It enables you to have your tools handy and promotes safety by keeping knives off cutting surfaces where they may cause accidents.

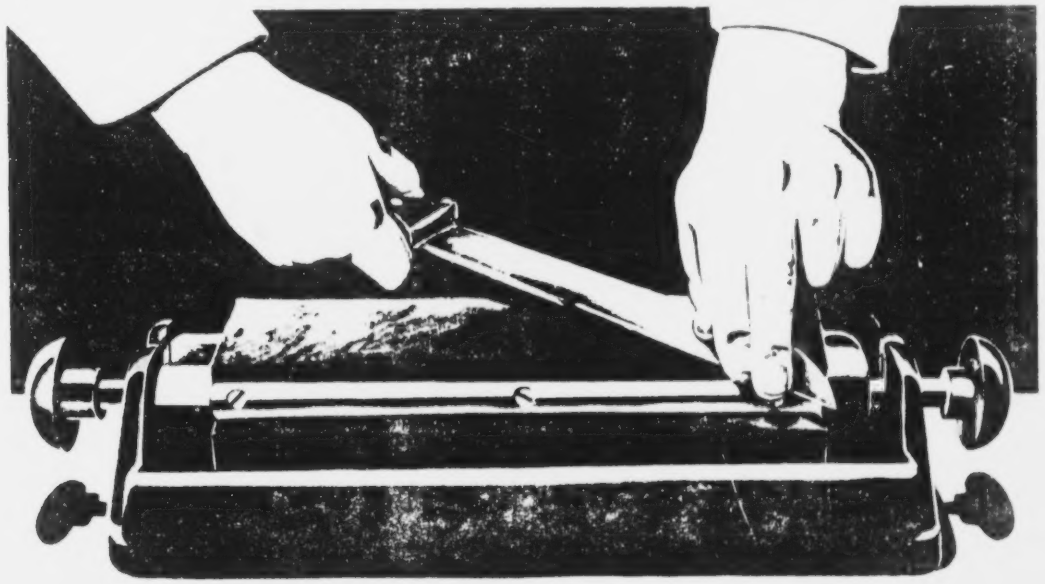


Figure 2-2. Sharpening knife on stone.

Grinder section. The grinder section consists of the hopper, feed tray, worm, grinder plate, and knife. The meat is fed into the hopper from the feed tray. The feed tray has a safety guard which fits over and is attached to the top of the hopper. Below the hopper opening is the feed worm, which forces meat against a perforated plate. A blade attached to the end of the worm revolves against the plate, cutting the meat as it is forced through the plate.

Operation. To operate this tool, be sure to remove all bones from the meat and cut it into thin strips before grinding it. Never grind frozen meat or run the grinder when it is empty. Using thin strips of meat reduces the danger of overheating and overloading the grinder. Frozen meat will also overload it.

Meat Tenderizer. The meat tenderizer is an electric gravity-fed machine for tenderizing steaks. It consists of a rigid metal housing inclosing the motor, cutting group, and a hopper or feed tray. The cutting group consists of roller-type serrated cutting knives and stripper combs. The machine has a safety interlock switch to prevent operation during cleaning or at any time when the hopper is open.

Meat Slicer. This machine is a gravity-fed portable slicer designed for slicing cold cuts and can be semiautomatic or automatic. It provides uniformity and speed in slicing with minimum waste. Slicers are made of either porcelain or stainless steel and are built to hold all of the necessary devices for efficient operation and safety. The meat is placed on the feed by gravity. The carriage is pushed toward the rear of the machine, coming into contact with the blade. The slicer has a thickness control knob and a thickness indicating scale used to adjust the thickness of slices. The end slice plate holds the meat stationary while slicing. It also reduces your chances of cutting your finger. Observe the sharpening attachment shown in figure 2-4. The sharpening attachment has two circular sharpening stones that can be manually engaged to the edge of the cutting knife for sharpening.

Bandsaw. Notice the bandsaw picture in figure 2-5. Assume that you are cutting meat with this saw. First, adjust the meat gauge plate to the thickness you want. Second, place the meat to be cut on the meat carriage, pushed firmly against the gauge. Then, while standing in front of the machine, turn the switch on, and make the necessary cuts by pushing the meat and carriage toward the blade.

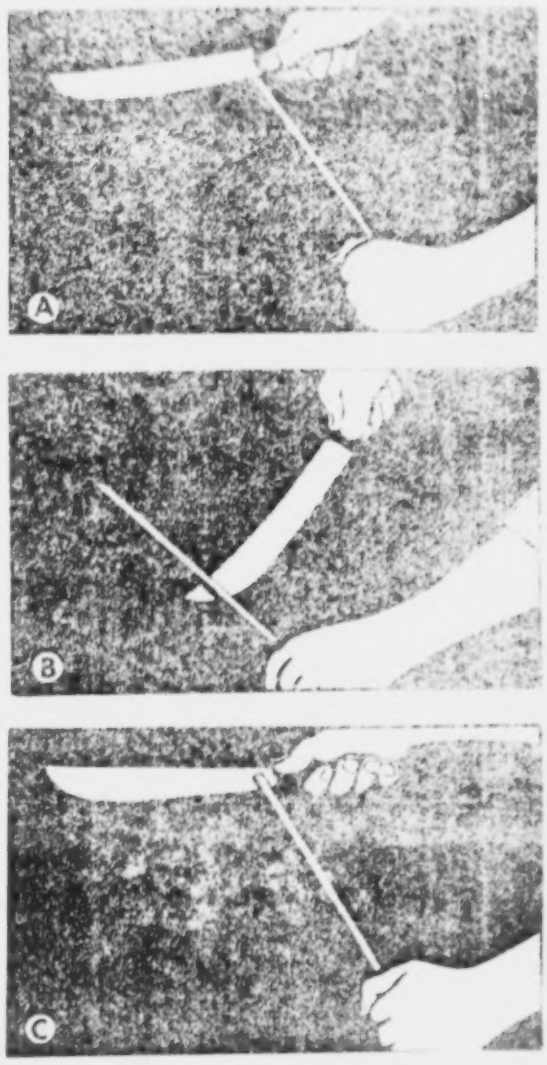


Figure 2-3. Steeling a knife.

Exercises (006):

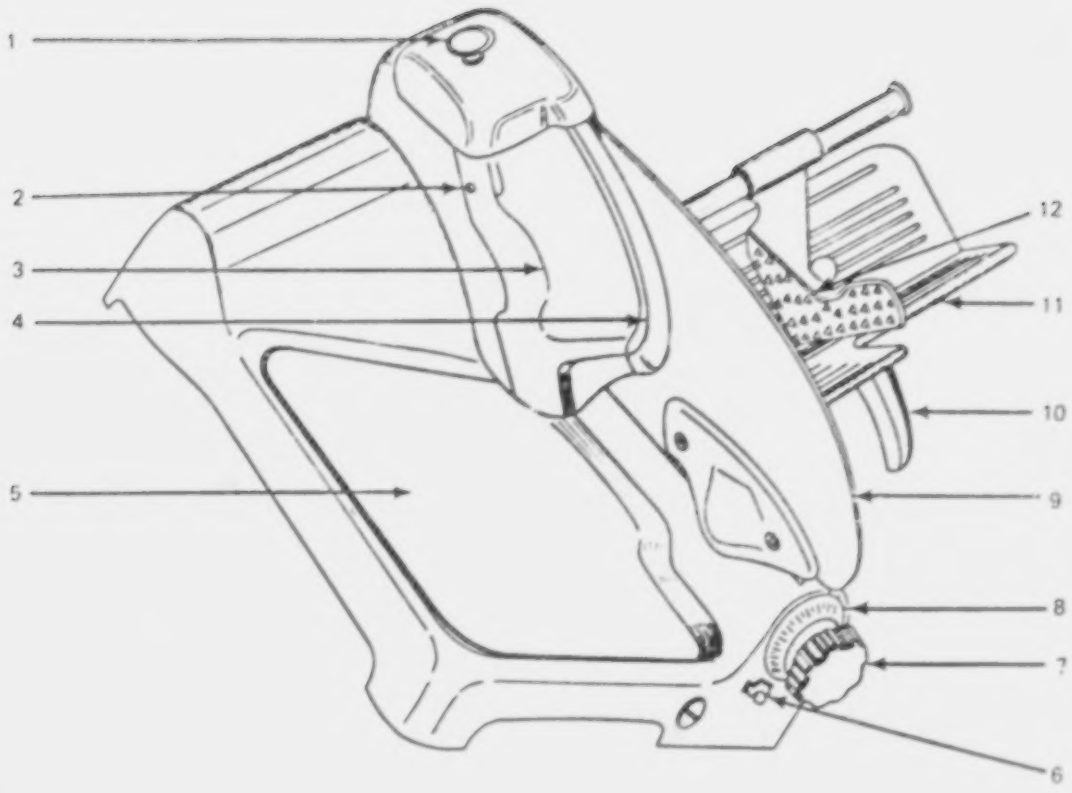
1. List the parts of the grinder section of the meat grinder.

2. What part of the meat tenderizer prevents operation during cleaning?

3. What part of the meat slicer holds the meat stationary while slicing?

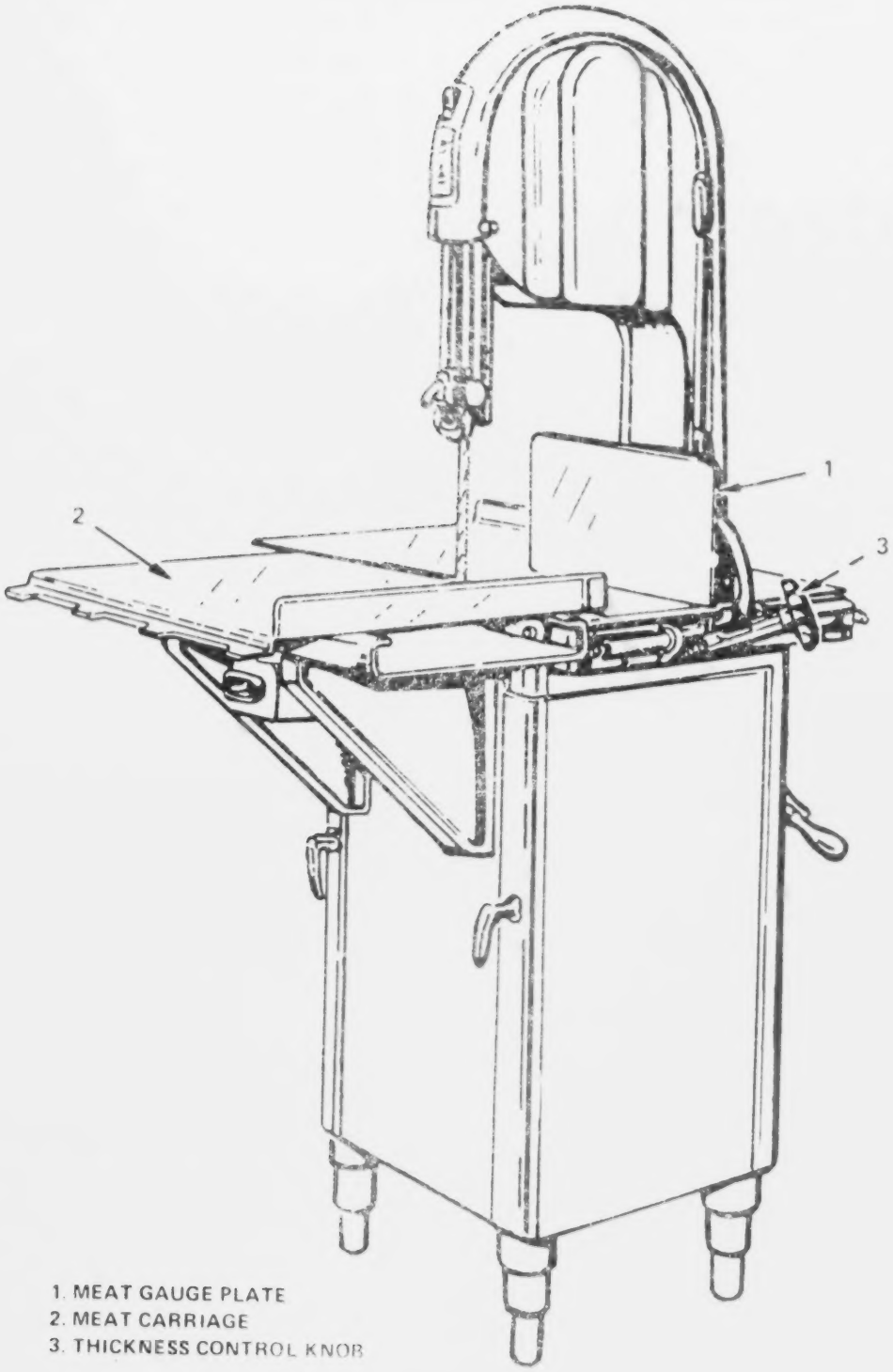
4. What should be done to meat before grinding it in the meat grinder?

5. What is your first step in operating a bandsaw?



1. SHARPENING ATTACHMENT.
2. SLICE DEFLECTOR PINS.
3. SLICE DEFLECTOR.
4. CUTTING KNIFE.
5. RECEIVING TRAY.
6. MOTOR SWITCH.
7. THICKNESS CONTROL KNOB.
8. THICKNESS INDICATING SCALE.
9. THICKNESS GAUGE PLATE.
10. FEED CARRIAGE GRIP.
11. FEED CARRIAGE.
12. END SLICE PLATE.

Figure 2–4. Meat slicer.



1. MEAT GAUGE PLATE
2. MEAT CARRIAGE
3. THICKNESS CONTROL KNOB

Figure 2-5. Meat bandsaw.

2-3. Meat Department Layout

You may be required to lay out and arrange equipment in a commissary meat department. For efficient operation, there are several factors you must consider.

007. Indicate location of equipment and the proper layout of the meat department.

Equipment Arrangement. Space is the most important consideration when you are arranging equipment. Figure 2-6 is a diagram of a typical meat department in a 31,500-square-foot commissary. Study figure 2-6 carefully, giving attention first to the physical space required. The principal rooms involved in processing meat are 16, 17A, 17B, and 18.

Carcass beef storage. Carcass meat is received through the outside door of the storage room, and remains there until time for processing. The proper portion of meat is then moved by rail into the processing room where it is cut into retail cuts.

Meat processing room. Notice the meat rail that runs from the storage room to the two meat saws in the processing room. The purpose of the rail is to eliminate unnecessary carrying of heavy wholesale meat items. At this point the carcass meat is processed into retail cuts, utilizing the meat saws and trim tables. The retail cuts of meat are trimmed, cleaned of bone dust, put in trays, and moved to the wrapping room. The meat grinder, tenderizer, and patty machine are also located in the processing rooms.

Meat wrapping room. The wrapping room is set up to accommodate both the automatic wrapping and labeling machine and the handwrapper. The handwrapper is used to wrap bulky meats such as roast or hams. The slicer is located in a convenient location for slicing hams or luncheon meats for customers. After wrapping and labeling the retail cuts of meat, move them to the restocking aisle and arrange them in the display case.

The equipment in figure 2-6 is arranged in such a manner that distance between preparation points are minimized, and consequently processing time is also at a minimum.

Exercises (007):

Identify each true statement and correct those that are false.

___ 1. Carcass beef is received through the outside door of the meat processing room.
___ 2. The meat rails run from the storage room to the meat saws in the processing room.
___ 3. The meat slicer should be located in the meat processing room.
___ 4. The meat grinder is located in the processing room.

2-4. Safety

Safety is vital to you and the successful operation of a meat department. We will discuss safety as it pertains to the following:

- Handtools.
- Powered equipment.
- Processing areas.

008. Identify safety precautions pertaining to use of handtools, powered equipment, and refrigerated rooms in the meat department.

Handtools. Use handtools for their intended purpose only. Do not, for instance, try to cut through a joint with a steak knife—use a boning knife. You must wear a safety apron and metal mesh gloves while you are using knives. Even experienced meatcutters may make serious errors. For this reason, everyone, whether experienced meatcutter or apprentice, such as yourself, must use this safety equipment. Although using safety aprons and gloves reduces the chances of an accident, be extremely careful while using knives. Meatcutting requires a large amount of concentration. While cutting and boning meat, always cut away from you. Know where your knives are at all times. Do not, for instance, leave your knives on the cutting table where they may be accidentally covered with meat. This could cause a serious injury. Always keep the knives you are not using in your knife pouch or storage rack.

Wearing the required hardhats and safety shoes will also help to prevent injuries, but to make safety work, you must do your part. Therefore, be careful when you remove or store meat on rail hooks. Remove, clean, and store hooks not in use. Work as efficiently and quickly as you can safely, without taking chances. Take enough time to be safe.

Powered Equipment. After reading the introduction to this chapter, you must realize the importance of using powered equipment safely. Therefore, always use guards and guides when operating this machinery, and do not tamper with safety interlock switches. They are there for your protection. Do not wear metal mesh gloves while operating powered equipment. Adjust meat saws or slicers to the desired thickness before turning on the power. Never, for any reason whatsoever, put your hands in or near the grinder hopper while the machine is running. If you are in doubt about the operation of any powered equipment, ask an experienced meatcutter or your supervisor. After you make a mistake, it's too late.

For safety's sake, it is everyone's duty to notice faulty or exposed electrical power cords. Electrical outlets should be firmly secured and have adequate protective covers. Ground wires should be installed where required. When cleaning any powered equipment, always turn off the power at the switch box or remove the plug from the outlet.

Processing and Storage Areas. Cluttered work and storage areas are one of the most common causes of accidents. Therefore, keep the floors clear of debris, equipment, and supplies. Also, clean meat, fat, water, and blood drippings from work area floors.

Refrigerated rooms have safety alarms which can be activated if you are accidentally locked in. In addition to this, where required, there are also fire axes inside refrigerators. Ice on floors of storage areas are safety hazards. If you notice ice on floors, remove it to prevent an accident. Be aware of improper storage techniques so that

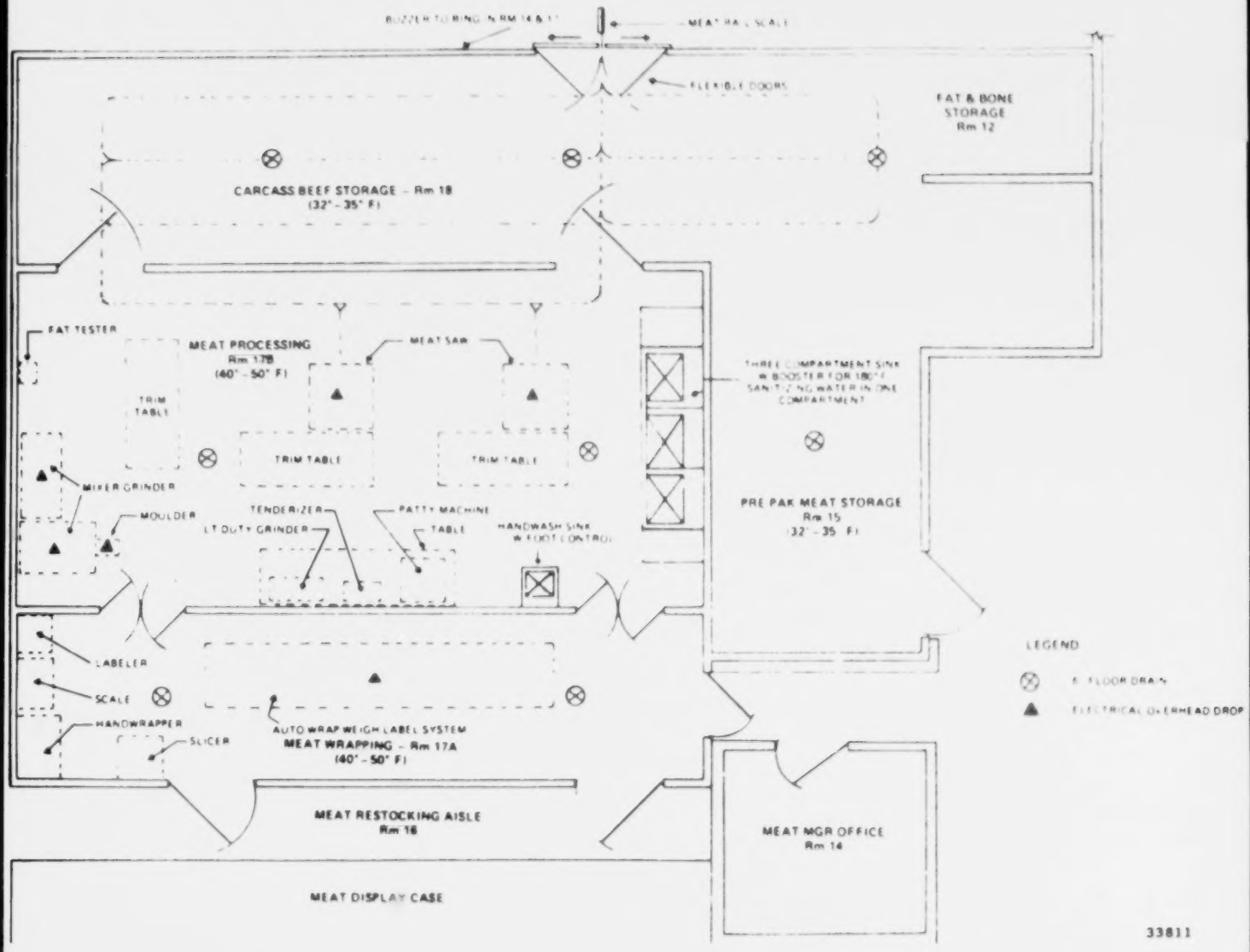


Figure 2-6. Meat processing layout diagram.

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you are not injured by falling boxes or protruding box edges. Notify your supervisor if you see sharp edges or protruding nails in storage areas. Last but not least, there are right ways and wrong ways to lift heavy boxes or wholesale meat cuts. Learn the right way and prevent injury to yourself. This means, if at all possible, to use your legs in lifting, not your back.

Exercises (008):

1. Use handtools only for their _____ _____ _____ .

2. The four safety devices to use while boning meat are (1) _____ _____ _____ . (2) _____ _____ . (3) _____ . (4) _____ _____ .

3. While using knives always cut _____ from you.

4. When knives are not being used, keep them in your _____ _____ or _____ _____ .

5. Remove, clean, and store meat _____ not in use.

6. While operating powered equipment, you should always use _____ and _____ .

7. Do not tamper with _____ _____ _____ on powered equipment.

8. The one safety device that is not worn while operating powered equipment is the _____ _____ _____ .

9. It is your duty to notice _____ _____ _____ electrical cords and outlets that are not _____ _____ or without protective _____ _____ .

10. Two safety items provided in case you accidentally lock yourself in a refrigerated room, are _____ and _____ _____ .

11. When lifting heavy objects, use your _____ not your back.

2-5. Sanitation and Cleanliness

Sanitation is a must in all meat department areas. Good sanitation standards not only improve the appearance of the department, but they also reduce loss of meat and protect the health of both department personnel and customers. We will consider sanitation from the aspects of equipment, department areas, and personnel.

009. Cite correct cleaning procedures used in the meat department.

Sanitation. The meat department must comply with the applicable sanitary requirements of AFR 163–8, *Control of Foodborne Disease, and* be kept scrupulously clean. To keep the standards of sanitation required, the meat department must have an ample supply of hot water, heated to 140°F. or higher. Use detergents and sanitizing solutions for their intended use and strictly in accordance with the manufacturer's recommendations. Meat, blood, and offal are subject to rapid bacteria growth and germ development if not properly controlled.

Handtools. Clean knives, steels, meat saws, boning hooks, mesh gloves, safety aprons, and sanitary knife racks daily. Wash tools individually in warm water and detergent. Then rinse and sanitize them in hot water. If you notice cracks and crevices in plastic handled handtools, notify your supervisor so they can be replaced. Meat and fat accumulate in cracks and crevices and are breeding areas for bacteria growth.

Power operated equipment. At the end of business each day, thoroughly wash, rinse, and sanitize all metal parts of powered equipment that come into contact with meat. Be careful to prevent water from coming into contact with motors or electrical connections. After cutting raw pork or poultry, always clean and sanitize the equipment before using it for processing beef. beef.

Processing area. Scrub the processing area floors with a warm detergent or washing-powder solution at the end of each day. To aid in keeping floors clean, rubber-like mats of solid composition or heavy paper or cardboard are sometimes used on the floor. Remove this material daily and thoroughly wash, sanitize, and steam clean the floors.

Storage areas. As often as necessary, wash and clean all refrigerated rooms and refrigerators. On a weekly basis, empty and clean all meat display cases. Wash with an approved detergent, rinse, sanitize, and air-dry meat hooks and trays weekly. Heavy paper or cardboard is sometimes used on the storage room floors, but it must be removed when the floor is cleaned.

Do not allow meat, meat products, and poultry to remain out of refrigerated rooms, boxes, or display cases longer than is necessary for processing and cutting.

Cutting tables. Use plastic or hard rubber cutting boards on top of the you cut table when cutting meats with tools other than small knives, and especially when you use a

handsaw to cut bones. When the table develops cracks, crevices, or cuts, request that it be replaced or repaired. Do not use the cutting table for storage or keep meat on the table longer than necessary. The processing room temperature is higher than that in the storage room, and over an extended period of time, bacteria will grow. Do not allow frozen meat to thaw on the cutting table. Thoroughly clean cutting tables at the close of business each day with hot water, a detergent approved for meat contact surfaces, and a stiff, clean bristle brush. The base veterinarian or his or her representative may recommend other measures to keep the surfaces sanitary.

Scales. Clean scales with a damp cloth daily, or more often as required. Place paper on the scales, before weighing delicatessen meats.

Exercises (009):

1. How hot must water in the meat department be heated to keep standards of sanitation?

2. Why must plastic handled handtools be replaced once they have cracks and crevices in them?

3. What must you do to meat you cut equipment after cutting raw pork or poultry?

4. How often must meat display cases be emptied and cleaned?

5. How often must cutting tables be cleaned and how?

010. Specify three standards of personal cleanliness and state why meatcutters are more subject to certain ailments than are other personnel.

Cleanliness and Grooming. You are expected to be close-shaven, keep your hair trimmed, and your hands clean at all times. Keep your fingernails short and clean, and wash your hands frequently, always after using the restroom.

Clothing. Meatcutters are furnished white smocks, trousers, and aprons. This special-purpose clothing is worn on the basis of duty requirements, and only this type of clothing is permitted when you are on duty. When your smock or apron becomes soiled, exchange it for a clean one.

Health. If you have a cold, sore throat, skin infection, or other ailments, do not wait; go to the dispensary. You may contaminate the meat and infect other personnel as well. Get plenty of rest, eat properly, and protect your health. When working in temperatures ranging from 0° to 50°F., you are more subject to colds and similar ailments than you would be in many other jobs.

Exercises (010):

1. What are the three standards of personal cleanliness?

2. Why are you, in your job, more subject to colds and similar ailments than those working elsewhere?

011. Specify areas of the meat department which the veterinarian inspects and state why he or she must be present when meat is received.

Facility Inspections. The base veterinarian or his or her representative inspects periodically the meat department. The veterinary inspection includes sanitation of the processing area, equipment, display cases, and all storage areas. He or she checks personnel on duty for haircuts and cleanliness. During inspections he or she may administer individual swab test of your and other meatcutters' hands. This test will reveal germs that can be eliminated by frequent washing. He or she checks for outdated code dates on meat items and discolored meats on display and checks refrigerated areas for proper temperatures. He or she reviews food handler cards, and if necessary, may indicate scheduling the individual for re-examination.

Meat Inspections. When meat is received, the veterinarian or his or her representative must be present to inspect the condition and proper temperature of the meat. The veterinarian issues maximum receiving temperatures for beef (45°F.) and poultry (36°F.). Through these series of inspections the veterinarian prevents the spread of infectious diseases.

Exercises (011):

1. What areas of the meat department do the veterinarian inspect?

2. Why must the veterinarian or his or her representative be present when meat is received?

CHAPTER 3

Receipt and Storage

IN THIS CHAPTER, we will discuss the in-checking procedures for meat received, the forms in which beef, veal, lamb, pork, and poultry are received; and where, when, and how to store these meats. You are expected to note temperatures in storage areas and display cases and know what to do if such temperatures are too low or too high. We will also discuss how charge sales are handled.

3-1. Receipt

You are concerned primarily with three sources of supply for meat items. These sources are the commissary warehouse, base-procured items from local vendors, and the Defense Personnel Support Center (DPSC).

012. Specify the procedures for receiving meat in the meat department.

In-Checking. The store manager designates in writing, in-checkers who are responsible for receiving all meat. Several individuals are designated, so that at least one will always be present when deliveries are made.

Receiving meat from the commissary warehouse. Your tasks as an in-checker is to meet the warehouse truck and delivery people, who will give you three copies of AF Form 129, Tally In-Out, or a mechanized listing, listing the types and quantities of meat delivered. Each item should have been weighed and recorded on the form. Check off each item to be sure everything is accounted for. Check the meat received, and if the items delivered coincide with the AF Form 129 or mechanized listing, sign copies 1 and 3 of the form. Turn all three copies over to the meat department supervisor. He or she will forward all copies to the commissary accounting office. You and your coworkers will then store the meat.

Carcass meats. Most of the beef you will process will be from beef carcass. Commissaries are limited in the amount of primal, subprimal, and commissary-ready beef to no more than 20 percent of total beef requirements. The primary source of carcass beef and primal cuts is DPSC. Only emergency fill-in requirements are procured direct from vendors of commercial sources. Weigh 100 percent of the carcass meats received from any source. When a variance exists between actual net weight and weight shown on the tag supplied by the vendor, or when such a tag is not attached to a carcass, mark each tag with the actual net weight. Carcasses are received, accounted for, and inventoried at the marked net weight.

Exercises (012):

1. Who is responsible for designating the person to receive meats?

2. How many copies of AF Form 129 are used for receiving meat from the warehouse?

3. Who is the primary source of beef for the commissary?

4. What percent of carcass meat must be weighed upon receipt?

5. At what weight are carcasses marked upon receipt?

3-2. Storage

After receiving the meat, you must store it in chillrooms or freezers until time for processing. You must also observe proper temperatures and code dates.

013. Specify procedures for chillroom and freezer storage of meat and poultry products.

Chillroom Storage. When received, most of the meat is stored in the chillroom. However, different types of meat require individual storage techniques. This is discussed here.

Storage on hooks. Quarters and whole carcasses of beef, veal, and lamb are stored on meat hooks, which are moved along rails from the unloading dock into the chillroom. In using these hooks this way, you must be sure to rotate meat remaining from previous deliveries in order to insure that you first use the meat already on hand. If there is no meat on hand, however, place the newly delivered meat at a point from which it can be moved easily into the processing room. To permit proper air circulation, allow ample space between the quarters or carcasses.

Boxed meats. Meats received in boxes are stacked in the chillroom on dunnages. To insure that air can circulate freely, stack the boxes 2 inches from the floor, 4 to 6 inches

from the wall, and a minimum of 24 inches from the ceiling. Segregate and mark all shipments so that the oldest products are used first.

Poultry products. All poultry sold in the meat department are fresh and usually are received prepackaged. You must exercise extreme caution when storing fresh poultry, because of its rapid spoilage rate. In fact, poultry has a storage life of only 5 days. Store ice packed chickens in crushed ice containers with drains to the outside.

Freezer Storage. Although most of the meat items received and sold in the meat department are in a chilled state, there are exceptions. Under some circumstances (such as in commissaries overseas) beef, pork, and prepackaged meats may be received frozen. When storing items in the freezer, use the same rotation and stacking procedures as for chillroom storage. You can temper frozen beef in a chill box at 32° to 35° F. to an internal temperature of 28° to 30° F. Process and sell the beef chilled. Display a sign informing customers that the beef has been frozen before and refreezing will not affect wholesomeness but will lower quality.

Exercises (013):

1. How should beef quarters be stored?

2. How should you stack boxes of meat?

3. How should you store ice packed chickens?

4. If you receive frozen beef, how do you temper it for processing?

014. Provide missing information in incomplete statements regarding code dates for chilled prepackaged meats.

Code Dates. Many meat items received and sold in the meat department are prepackaged. Only the fresh and best quality prepackaged meats are sold, and to insure freshness and quality, code dates are used on each package. The three types of code dates are as follows:

a. Dates of pack or manufacture are those to which recommended shelf-life may be added to determine safekeeping time.

b. Pull dates are those in advance of dates of pack or manufacture beyond which an item should not be offered to a consumer.

c. Quality assurance dates are those subsequent to dates of pack or manufacture beyond which the level of quality initially provided can no longer be assured.

Systems. Dates are normally set to assure reasonable time for sale and holding by the customer. Systems used to identify these dates vary by producer. The three common types of systems used are as follows:

a. The standard American Meat Institute (AMI) system uses four numerics. The sum of the two outside digits equals the month, while the two inside digits indicate the day; for example, 0154 (April 15).

b. The revised AMI system also uses four numerics. However, the first two, reading from left to right, represent the month, while the last two indicate the day; for example, 0415 (April 15).

c. The last system is the alphanumeric system, which uses the first three letters of the month, followed by two numbers indicating the day; for example, APR 15.

Standards. The commissary and base veterinarian are furnished a complete index of code dates, plus an explanation of both the type code and dating system used. The open-dates or the alpha system are encouraged. To insure that customers have a reasonable home storage period, certain criteria should be followed:

All prepackaged meats, including sausage and bacon, must be delivered with sufficient shelf-life remaining to allow for rotation and sale prior to the pull date. In the continental United States, sausage products labeled "Previously Frozen for Your Protection—Refreeze or Keep Refrigerated" may be displayed and sold chilled.

Exercises (014):

1. Code dates that are in advance of dates of pack or beyond which an item should not be sold, are called _____ dates.

2. _____ _____ dates are subsequent to dates of pack or manufacture beyond which the level of quality initially provided can no longer be assured.

3. The code dates to which recommended shelf-life may be added to determine safe keeping time are called _____ of _____.

4. If a package has 0172 as a code date under the standard AMI system, the date would be _____

5. If a package had MAR 12 as a code date, the date system would be the _____.

6. A package, code dates 0320 under the revised AMI system, would be dated _____

7. All prepackaged meats must be delivered with sufficient shelf-life remaining to allow for rotation and sale prior to the _____ _____ _____.

015. Specify the correct temperature ranges for selected refrigerated areas, and state how these temperatures are recorded.

Temperature Control. Temperature control within the meat department is vital. Germs multiply in warm temperatures and meat spoils rapidly. Proper temperatures retard spoilage and prevent damage to meat quality. In this objective, we will discuss the proper temperatures for the chillroom, freezer, processing room, and display cases as well as how often these temperatures are recorded.

Chillroom. The chillroom is maintained at a temperature of 32° to 35° F., with the least possible fluctuation. The temperature of this room should not be permitted to go below 32° F., because the slow freezing action will cause discoloration of the surface of meat items and will adversely affect quality. Fresh pork and poultry have an extremely limited storage life. Store these products in the coldest part of the chillroom.

Freezer room. The freezer storage room is maintained at a temperature of 0° to −10° F., with the least possible fluctuation. At times, you may receive frozen items in a slightly defrosted condition. If the veterinarian accepts the shipment, see that it is frozen without delay to prevent spoilage.

Processing room. The meat processing and preparing areas are refrigerated to the extent that maximum temperature does not exceed 50° F. at any time. Temperatures in excess of 50° F. promote bleeding and hasten discoloration. Never use the meat processing room used as a defrosting area.

Display cases. Meat department display cases are operated at temperatures commensurate with the requirements of the major group of articles in the case. In open-type display cases, the temperatures normally are maintained at 28° to 33° F. Cheese and dry sausage are displayed at 36° to 40° F. The closed-type cases are operated at a temperature of 32° to 34° F. If cases are arranged so that one part of the space is colder than other parts, display fresh pork cuts and all types of liver in the coldest section. Check display cases for proper temperatures frequently.

Temperature Recordings. Temperature recordings are maintained on all refrigerated rooms. Where automatic temperature recording devices are not available, thermometers are used. The thermometer should be located about 5 feet above the floor and away from the cooling coils or other metal surfaces. Thermometers with metal backs should be mounted on wooden surfaces.

three times

Check ~~operating~~ temperatures at ~~least once~~ daily—at the beginning, middle, and at the end of the day. If you find an abnormal temperature, do not try to repair the unit yourself, but notify your supervisor, who will call the proper contract maintenance. There are charts ~~are~~ posted on the outside of each walk-in box on which you will record these ~~three~~ daily temperatures.

Exercises (015):

1. Match each appropriate refrigerated area in column A with its related temperature range in column B. Each item in column B may be used only once.

Column A	*Column B*
Refrigerated Area	*Temperature Range*
1. Display case, open—cheese, dry sausage	____ a. 0° to −10° F.
2. Processing room	____ b. 32° to 34° F.
3. Freezer room	____ c. 50° F. maximum
4. Display case, open (normal)	____ d. 32° to 35° F.
5. Chillroom	____ e. 36° to 40° F.
6. Display case, closed (normal)	____ f. 28° to 33° F.

2. State how and when the temperatures in exercise 1 are recorded.

016. Associate significant approximate keeping times with various frozen meat items; identify factors affecting storage life; and indicate ways to remove mold from ham.

Keeping Time. For various keeping time for assorted frozen stored meat items, refer to figure 3-1, which we will examine next.

Cured and smoked meats. The keeping qualities of cured and smoked meats depend upon the type of cure, the length of the smoking period, and the method of packaging. The storage life of such items is further influenced by the condition of the storeroom with regard to humidity, temperature, and sanitation.

Growth of mold and development of rancidity in hams and bacon can be retarded by stowing them in the chill space for current consumption and in the freezer for seasonal stocks. Since the growth of mold on cured and smoked meats is favored by the presence of condensed water, avoid excessive humidity. If the relative humidity is higher than recommended, it is essential that good circulation of air be maintained.

Hams and bacon which have been individually wrapped on one or more layers of paper have a tendency to retain upon the surface of the meat any moisture which may have come from the product after wrapping. This moisture, in a measure, stimulates mold and bacterial growth. If hams so wrapped are held at temperatures of 45° F. or above for a considerable length of time, mold and slime will form on

ITEM	APPROXIMATE KEEPING TIME (MONTHS)
BEEF, FROZEN	
BONELESS, FABRICATED (W/O GROUND MEAT)	10
BONELESS, FABRICATED (W GROUND MEAT)	8
CARCASS, WHOLESALE CUTS	10
CORNED	6
DRIED, SLICED	12
LIVER, WHOLE/PORTION CUT	4
TONGUE, FRESH	4
BOLOGNA	
LEBANON	8
50 PERCENT BEEF	3-4
60 PERCENT BEEF	3-4
75 PERCENT BEEF	6
CERVELAT	
DRY	6
SOFT (THURINGER)	3-4
HAMS	
BONELESS, COOKED	6
SMOKED, BONE-IN	6
LAMB	
BONELESS, FABRICATED	6
CARCASS, WHOLESALE CUTS	8
TELESCOPED	8
SALAMI	
COOKED	3-4
DRY	5
SAUSAGE	
LIVER	3-4
NEW ENGLAND STYLE	4
PORK, BULK STYLE	3
VEAL	
CARCASS, WHOLESALE CUTS	1

Figure 3-1. Frozen storage of meat items. 07940

the surfaces of the meat. Surface slime and mold make the ham unattractive and unpleasant to handle, but do not necessarily indicate spoilage. Accordingly, you should carefully inspect such products to determine how far the mold has penetrated. In most cases, where only the surface is affected, you can remove the mold from the meat with a stiff-bristled brush, then wipe with a clean cloth, moistened with a vinegar or salt water solution, and allow the meat to air-dry. When the mold growth is heavy, it may be trimmed away. If the ham does not have deep cracks or abrasions, the meat underneath the surface is usually perfectly sound and wholesome. When mold growth or spoilage is evidenced deeply between the muscles and around the bone, look the meat over carefully.

Carcasses and primal cuts. Quarters, carcasses, primal cuts of beef, lamb, and veal are hung or placed on racks when in a chilled condition. If such items are in a solid frozen condition when received, stow compactly as possible in the freezer space. Compactly stack frozen, boneless beef. Veal carcasses or cuts, particularly of the lighter weights and lower grades, are subject to rapid deterioration. Holding time of such items in the chill space should be held to a minimum. Treat fresh chilled pork cuts as highly perishable.

Variety meats and sausage. These items are highly perishable and storage time should be held to a minimum.

Exercises (016):

1. Match each frozen food item in column A with its appropriate keeping time in column B. Each item in column B may be used once or more than once.

Column A	*Column B*
Meat Items	*Keeping Time (Months)*
____ (1) Lamb carcass	
____ (2) Hams, boneless, cooked	
____ (3) Beef, corned	a. 6
____ (4) Veal carcass	b. 4
____ (5) Lebanon bologna	c. 1

2. List the three factors that affect the keeping time of smoked meat.

3. Give the two solutions that may be used to remove surface mold on hams.

017. Cite the procedures for issuing subsistence to organizations on a charge sale basis.

Charge Sales. The meat department is authorized to make charge sales on a reimbursable basis. Individuals drawing subsistence for an organization must have in their possession a current DD Form 577, Signature Card. All request for subsistence are made on AF Form 287, Subsistence Request. The activity drawing subsistence fills out the request, with the exception of columns F, G, H, and blocks 6, 8 through 11, and 13. The store administrative clerk reviews the issue request, assigns a voucher and subvoucher number, and sends all copies to the issue point. Meat department personnel must, upon receipt, make sure the voucher number is entered in block 13 before completing the transaction. Enter the actual quantity issued in column F (in ink). Normally the quantity issued is the same as the quantity requested. Meat department personnel will examine the individual's DD Form 577 to make sure he or she is authorized to receive the subsistence. Sign all copies of the request in block 8. The drawing representative signs in block 10 and is given copy 3 of the request. Meat department personnel will enter the unit price in column G and forward original and duplicate to the store administrative clerk.

Exercises (017):

1. What should individuals drawing subsistence for an organization have in their possession?

2. What individual must assign a voucher and subvoucher to the AF Form 287?

3. What copy of the AF Form 287 is given to the drawing representative?

4. Which copies of the AF Form 287 are forwarded to the store administrative clerk?

Processing and Preparing Meats

IN THIS CHAPTER, we will discuss the following:

- Characteristics of meats.
- Bone structure.
- Meat processing.
- Barbecuing meat and poultry.
- Salvaging procedures.

4-1. Characteristics of Meats

Some meat is dark red. Other meat is light pink. Also, the bones of young animals are not the same color as are the bones of older animals. These and other different characteristics indicate more desirable or less desirable quality in the same type of meat. Accordingly, we will examine such characteristics in this section.

018. Classify types of meat with their characteristics; name various cuts of pork the commissary procures.

Beef. Beef is the flesh of mature cattle a year or more old. Grain-fed steers under 3 years of age provide the best quality beef. Good beef has bright red flesh, well-marbled tissue, and is finely textured with a covering of firm, white fat. Steers and heifers differ in that a greater percentage of edible meat (fat-to-bone ratio) is contained in steers. A heifer is smaller than the average steer carcass. Steers can be easily recognized by the presence of the *pizzle* eye (or cap) located above the aitchbone at the rump end. Marbling is the network of fat, thin lines running through the middle of a cut—as distinguished from the rim of fat around the edges of the cut. When you first cut beef, it is a dark, purplish red which turns bright red soon after exposure to air. Less desirable beef has heavier lines of marbling and tends toward yellowish fat on the rim or covering. Bones of older cattle are white and brittle, while in young animals, the bones are soft and red.

Veal. Veal is the meat of milk-fed calves usually under 3 months of age. Good quality veal is characterized by light pink, finely textured flesh, surrounded by firm, white fat, with gleaming white cartilage (the early, soft bone structure which changes to harder bone as the animal grows older). You will find the flesh of older calves redder than that of younger ones. In older calves, the flesh is more like the darker red of mature beef.

Baby beef is 3 to 10 months of age, and is larger in conformation than pure veal. The flesh of baby beef is more like the darker red of mature beef. Both baby beef and veal have a high-moisture content, and the protective covering of fat is thin.

Lamb. Sheep under 1 year of age is classified as lamb. The flesh of lamb is firm-grained and light pink in color. You will find the bones soft, small, and red. Lamb has a plainly visible joint. This is a temporary cartilage which forms a serrated (tooth-like) surface between the shaft of the bone (tibia) and the head of the bone just above the fetlock joint on the foreleg. Older sheep have harder and whiter bones than lamb and no "break joint" is present. They have a "spool joint," that is the regular fetlock joint on the foreleg. The break joint has turned to bone, and the break will no longer occur above the fetlock joint.

Pork. Pork is the flesh of hogs usually under 1 year of age. Good pork has smooth skin, grayish-pink flesh, and is fine-grained and firm-textured, with a covering of firm, white fat. Poorer quality pork is dark pink to red and sometimes has fat with a yellowish tinge or case, especially in lower grades. The commissary only procures pork in cuts, such as loins, spareribs, hams, Boston butts, bacon, shoulders, picnics, and fatback.

Exercises (018):

1. Match each meat type in column B with its related characteristics in column A. Each item in column B may be used only once. (column A). NOTE: Each item in column B may be used only once.

Column A *Characteristics*	*Column B* *Meat Types*
____ (1) Firm white fat, bright red, fine-textured.	a. Veal.
____ (2) Hard white fat, grayish-pink flesh.	b. Pork.
____ (3) Light pink, firm-grained flesh; soft, small red bones.	c. Beef.
____ (4) Fine-textured, light pink flesh.	d. Lamb.

2. In what cuts does the commissary procure pork? Name five out of eight.

4-2. Structure and Primal Cuts of Beef

The structure of an animal includes both bones and flesh. Like all animals, cattle have major bones with which are associated less important bones. In this section, we will consider major bones and their relationship to the two major divisions of a side of beef (hindquarter and forequarter). Let's begin with major bones.

019. Associate major bones with their functional characteristics.

Major Bones. Figure 4-1 shows a skeletal chart of a side of beef. Observe this chart carefully as we study bone structure and refer to it often. We shall study these major bones: neckbone, backbone, pelvic bone, leg bones, ribs, armbone, and shankbone.

Neckbone. At the bottom left of figure 4-1, note the neckbone. This bone consists of vertebrae (jointed bones) which support the animal's neck.

Backbone. Above the neckbone (fig. 4-1), you see the backbone, extending from neck to tailbone. The backbone is similar to the human spine. Notice these bones associated with the backbone: the bladebone, which you use as one guide in processing chuck; and the chine bone, used as a measuring point in some beef processing. Although shown here as a single point, the chine bone is actually a ridge or crest along the backbone. Notice that the backbone supports the upper end of the ribs.

Pelvic bone. This very important bone, which corresponds to the human pelvis, contains both the aitch (or rump) bone and the hipbone. The aitchbone is so called because it resembles a rough capital letter H.

Leg bones. Strictly speaking, the leg bone refers to the round bone of the hindquarters, but we also find a shankbone attached by a joint to the round (leg) bone. Note the stifle joint between the round bone and the shankbone.

Ribs. Cattle have 13 ribs, attached to the backbone at one end (left side, fig. 4-1) and to the breastbone at the other end. A beef forequarter contains all but the last (13th) rib. You will use ribs to determine where to make key forequarter cuts.

Arm and foreshank bones. The armbone (lower center, fig. 4-1), actually part of the animal's front leg, is surrounded by meat which makes fine arm roasts. Use the armbone as a guide when separating the arm and shank from the chuck area of the forequarter. The foreshank bone is the lower part of the animal's front leg.

Exercises (019):

1. Match major bones in column A with associated functions in column B. Each item in column B may be used only once.

Column A *Major Bones*	*Column B* *Associated Facts*
____ (1) Arm and foreshank.	a. Include round bone, stifle joint, and shank.
____ (2) Pelvic bone.	b. Attached to bone at one end.
____ (3) Neckbone.	c. Parts of foreleg.
____ (4) Leg bones (including hindshank).	d. Supports neck
____ (5) Backbone.	e. Consists of aitchbone and hipbone.
____ (6) Ribs.	f. Includes bladebone and chine bone.

020. Associate retail cuts with the appropriate primal cuts of beef.

Hindquarter Primal Cuts. Carefully study figure 4-2, beef hindquarter chart, as you relate hindquarter bone structure to standard cutting lines (primal cuts) and individual cuts. A hindquarter—which consists of and the last (13th) rib, part of the backbone, and the pelvic and leg bones (including the hindshank)—contains seven cutting areas. Let's study the details of each primal cut.

Shank. The shank (area 1 at the top of fig. 4-2) provides ground beef and stew beef. The shank is the lower end of the animal's hind leg.

Heel of round. The heel of round (area 2) includes the stifle joint, which joins the leg (round) bone to the shankbone. It provides ground beef, stew beef, and roast. Note the dotted line next to the bone. You have to cut along this dotted line in processing the heel of round area.

Round. The round (area 3, fig. 4-2) is one of the choice beef areas. It includes the round (leg) bone and yields swiss steak (a) and round steak (b). Round steak is a favorite with customers.

Sirloin tip. Also called knuckle, area 4, is directly opposite the round and contains such individual cuts as roast and steak. Sirloin tip provides excellent tip roast, a choice bit of meat.

Rump. The rump (area 5) includes the aitchbone and tailbone. Process the rump into roasts.

Loin. One of the most choice beef areas, the loin (area 6) provides sirloin steak, porterhouse steak, T-bone steak, and top loin steak.

Flank. The flank (area 7) yields not only flank steak but also ground beef and stew beef. Note that the only bone in the flank area is a part of the 13th rib. The steak is removed from area shown within the dotted line.

Forequarter Primal Cuts. Look carefully at figure 4-3. The forequarter includes the neck, bladebone, part of the backbone, the first 12 ribs, and the shankbone. Let's examine each of these primal cuts.

Shank. The shank (area 1) includes the foreshank bone and a small portion of the armbone. (We discuss the hind leg shank under Hindquarter Primal Cuts.) From the shank, you get ground beef, beef stew, and soup meat with bone.

Neck. The neck (area 2) is processed into ground beef, stew, boneless roasts, and bones can be processed and sold as neckbones.

Chuck (area 3). This large area is one of the more desirable parts of the forequarter. You first separate the chuck from the rib and plate section, and then process the two sections into retail cuts from the various areas listed below.

a. Area 3a. Process this area into bladebone pot roasts or steaks. It includes part of the backbone and most of the bladebone. Bladebone roasts and steaks can be recognized by the long flat (blade) bone running through them.

b. Area 3b. Area 3b has a portion of the armbone and bladebone and the first four ribs. Process into bone-in pot roasts/steaks or boneless pot roasts/steaks.

c. Area 3c. The round bone and lower rib bones are included in this area. Area 3c yields round bone roasts or steaks.

Brisket (area 4). The brisket yields ground beef, stew beef, and boneless pot roast.

Rib (area 5). The rib includes the upper part of ribs 5

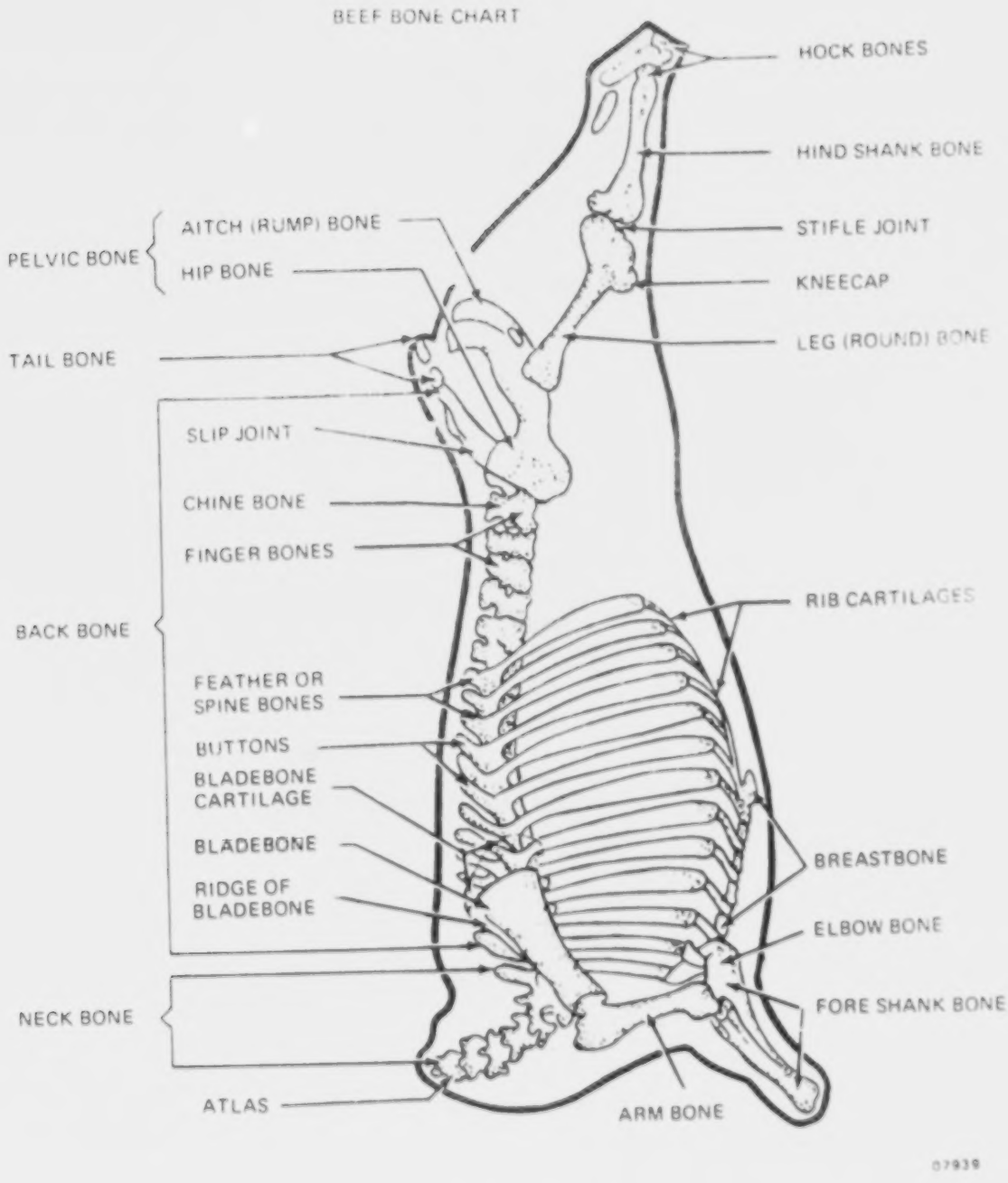


Figure 4-1. Skeletal side of beef.

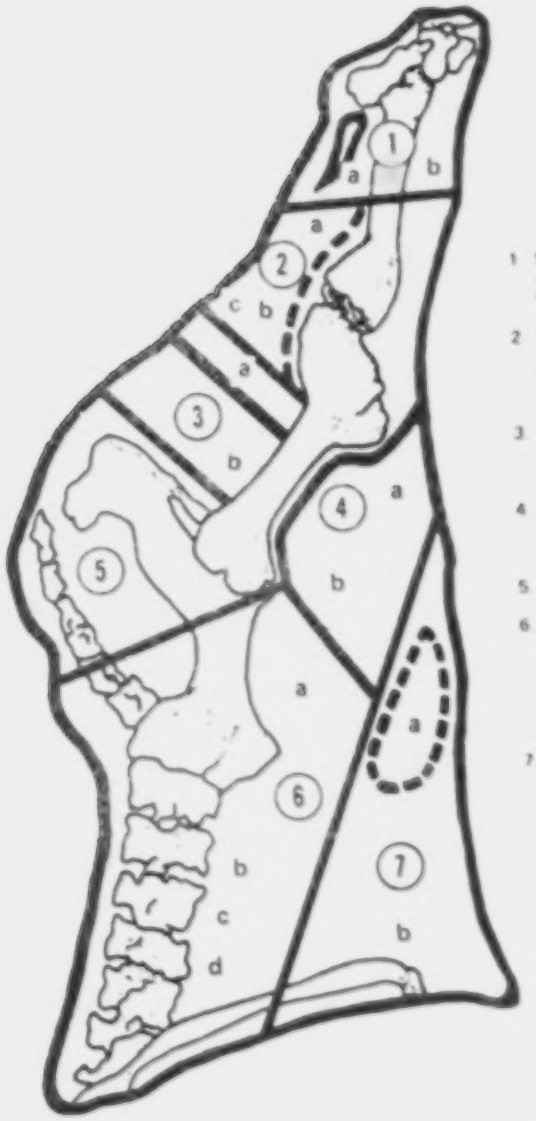


Figure 4-2. Hindquarter cart showing cutting lines of standard cuts.

through 12 and a portion of the backbone. From this area you receive top loin steak, rib steak, rib eye steak, and rib roasts.

Plate (area 6). The plate area consists of the center rib bones 5 through 12. It yields short ribs and ground beef.

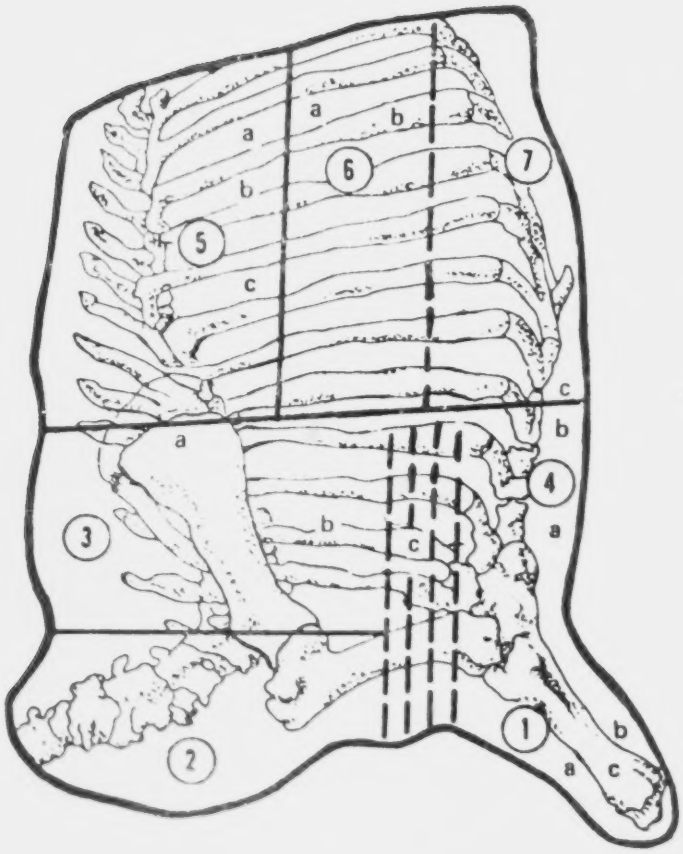
Short plate (area 7). The shortplate consists of the lower part of rib bones 5 through 12 and yields ground beef.

Exercises (020):

1. Match each individual cut in column B with its related standard hindquarter primal cut in column A. The individual cuts in column B may relate to more than one primal cut.

Column A	*Column B*
Primal Cuts	*Individual Cuts*
____ (1) Shank.	a. Boned and rolled roast.
____ (2) Heel of round.	b. Flank steak.
____ (3) Round.	c. Stew beef.
____ (4) Sirloin tip.	d. Ground beef.
____ (5) Rump.	e. T-bone steak, top loin steak.
____ (6) Loin.	f. Swiss steak.
____ (7) Flank.	g. Roasts and steaks (opposite round area).

3.1



1. SHANK
   a. GROUND BEEF
   b. STEW BEEF
   c. SOUP MEAT W/BONE
2. NECK–BONELESS ROAST, STEW BEEF OR GROUND BEEF
3. CHUCK
   a. BLADE BONE POT ROAST OR STEAK
   b. 7-BONE POT ROAST OR STEAK
   c. ROUND BONE POT ROAST (ARM) OR STEAK
   d. BONELESS POT ROAST (A, B, OR C)
4. BRISKET
   a. STEW BEEF
   b. GROUND BEEF
   c. BONELESS POT ROAST
5. RIB
   a. TOP LOIN STEAK
   b. RIB STEAK
   c. RIB EYE STEAK
   d. ROAST
6. PLATE
   a. SHORT RIBS
   b. GROUND BEEF
7. SHORT PLATE, GROUND BEEF

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Figure 4–3. Beef forequarter chart showing cutting lines and location of standard cuts.

2. Match each individual cut in column B with its related standard forequarter primal cut in column A. The individual cuts in column B may relate to more than one primal cut.

Column A *Primal Cuts*	*Column B* *Individual Cuts*
____ (1) Chuck.	a. Ground beef.
____ (2) Plate.	b. Stew beef.
____ (3) Shank.	c. Boneless pot roast.
____ (4) Short plate.	d. Steak.
____ (5) Brisket.	e. Bladebone pot roast.
____ (6) Neck.	f. Short ribs.
____ (7) Rib.	g. Round bone pot roast.
	h. Soup meat with bone.

4-3. Beef Processing

You are now ready to study the processing of beef. We will discuss preliminary hindquarter breaking procedures and the final processing of retail cuts of the hindquarter. Then we will cover forequarter breaking and further processing procedures. We will also discuss fabricated subprimal cuts of beef. Let's begin this discussion with hindquarter processing.

021. Specify various steps in hindquarter breaking procedures.

Hindquarter Breaking Procedures. Refer to figures 4-4 through 4-9 as we discuss the breaking procedures for the hindquarter.

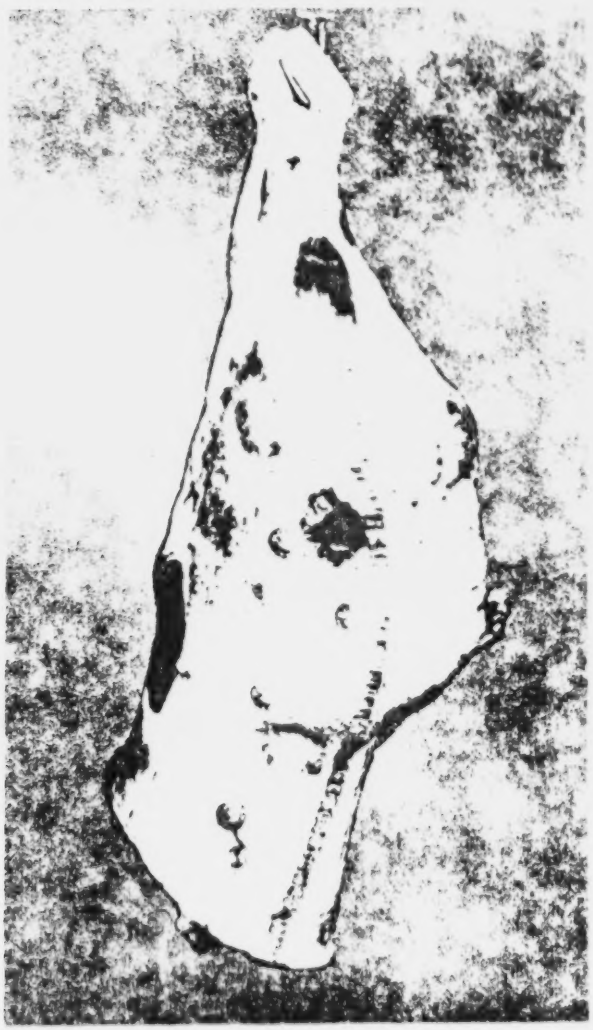

Figure 4-4. Hanging hindquarter.

Figure 4-4. Hang the hindquarter, as illustrated, with the meathook extending all of the way through the gambrel cord.

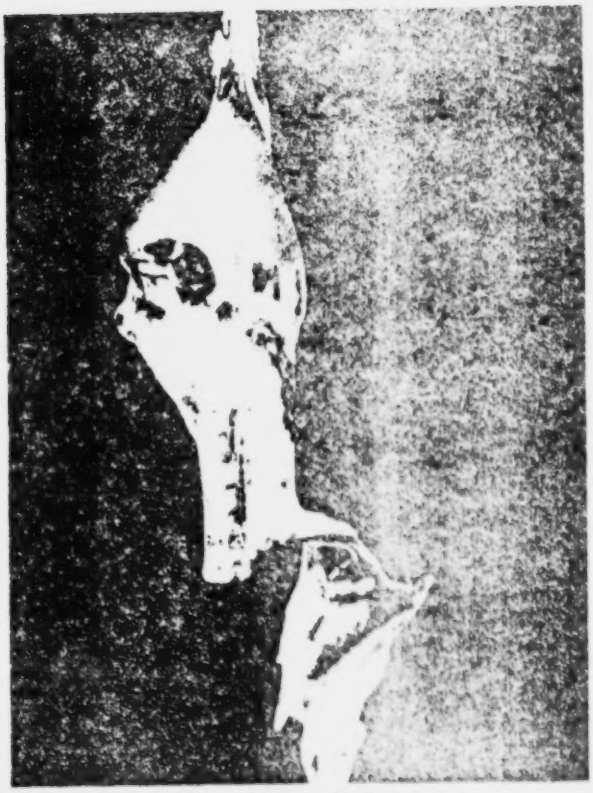

Figure 4–5. Removing flank

Figure 4-5. Remove the spinal cord and all dry, dark, or discolored portions of the hindquarter.

a. Locate the natural seam and follow the contour of the round, cutting in a straight line in front of the kidney knob perpendicular to the backbone down to the 13th rib

b. Remove the kidney and all excess fat, but leave an ample covering of fat over tenderloin.

Figure 4–6. Sawing through

Figure 4-6. Saw through the 13th rib to complete removal of the flank.

Figure 4–7. Removing sirloin tip

Figure 4-7. Next, remove the sirloin tip.

a. Locate the kneecap.

b. Cut directly underneath the kneecap to the round bone.

c. On the top round side, line up from the kneecap to the aitchbone, so that the cut is 1½ inches from the aitchbone, by following the leg bone.

d. On the bottom round side, cut from the kneecap down to the aitchbone to expose the front of the leg bone.

e. Insert the knife 1 inch below the rump knuckle at a 45° angle and draw out 1 inch below the gland on the flank side, leaving the gland on the sirloin tip.

Figure 4–8. Marking angle for removing full loin

Figure 4-8. Mark the cutting line for separating the full loin from the round area. Establish the correct angle by using the third sacral vertebra and the rump knucklebone as pivot points.

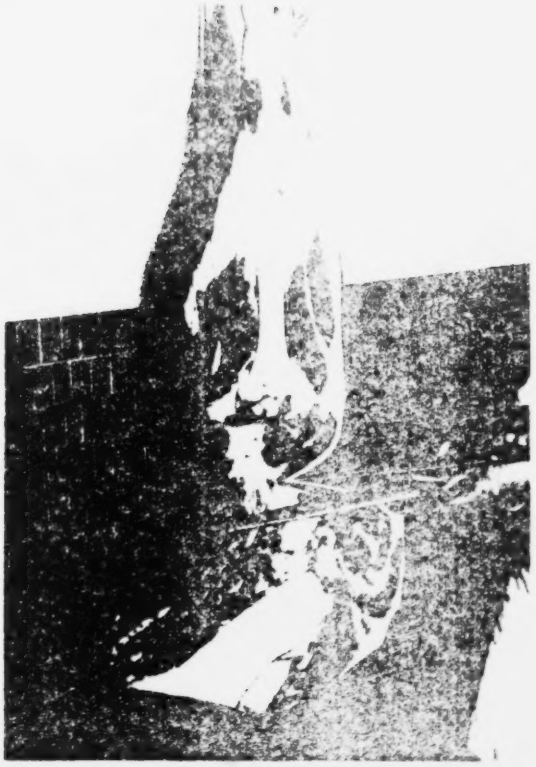

Figure 4–9. Separating full loin from round

Figure 4–10. Removing flank steak

Figure 4-9. Complete the separation by sawing through the bones. Cutting at this angle will result in less bone in pinbone steaks.

Exercises (021):

1. Identify each true statement and correct those that are false.

___ a. To hang the hindquarter, extend the meathook all of the way through the gambrel cord.
___ b. Before removing the flank, remove the kidney and all fat covering the tenderloin.
___ c. When removing the sirloin tip, leave the gland on the full loin.
___ d. Separate the round from the hindshank by cutting above the gambrel cord to the natural seam.

2. What is the procedure used to remove the flank area from the hindquarter?

3. In establishing the correct angle for the cutting line separating the full loin from the round area, what are the pivotal points?

022. Identify cuts of meat obtained in final processing of primal cuts from hindquarter; state how to separate top round from bottom round and the cuts of meat obtained from each.

Flank. Refer to figures 4-10, 4-11, and 4-12 in removing the flank steak and processing it into steak.

Figure 4-10. To remove the flank steak from the flank section proceed as follows:

a. Cut a thin strip from the navel side to untie the heavy membrane.

b. Remove the membrane by pulling from the thick end to the opposite end.

c. Locate the natural seam under the flank steak.

d. Release the thick end and pull the flank steak as far as it will pull easily; then cut off the flank steak.

e. Use the remaining portion of the flank for stew beef and ground beef.

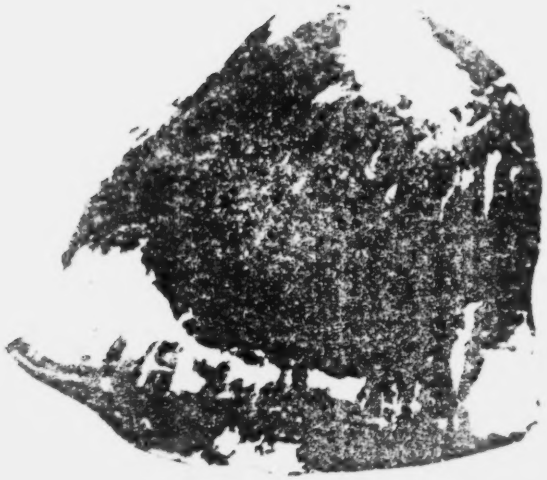

Figure 4–11. Flank steak.

Figure 4-11. The flank steak is lean, oval shaped, and free of serious membrane or white fibrous tissue, with the grain running lengthwise.

Figure 4-12. You can now merchandise the flank steak in any one of the following ways:

a. Shorten the muscle fibers by scoring the steak with a knife, making crisscross cuts about 3/4 of an inch apart.

b. Tenderize the steak, using the tenderizing machine.

c. Prepare the flank steak with a pocket by opening the thick end of the steak crosswise toward each side (forming an opening but not cutting through the side). Insert the knife in the opening and cut a pocket on the inside of the steak.

d. Prepare fillet of flank by rolling the steak around a piece of fat. Insert toothpicks or meat skewers, and cut it up into individual steaks.

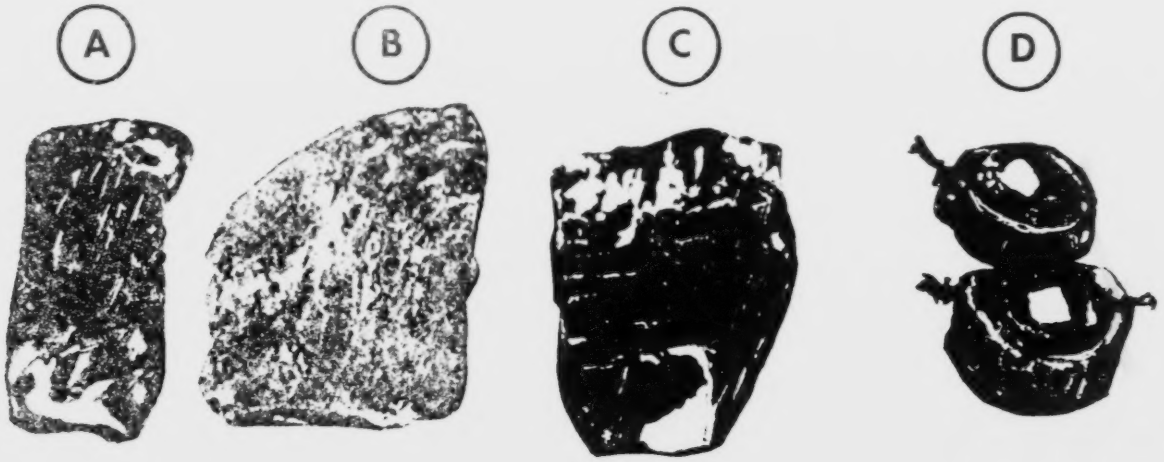

Figure 4–12. Merchandising the flank steak.

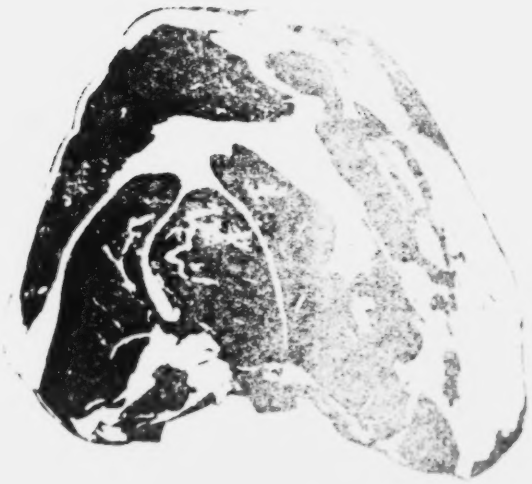

Figure 4–13. Sirloin tip, with covering on.

Sirloin Tip. Refer to figures 4-13 and 4-14 in processing the sirloin tip.

Figure 4-13. In the following steps the sirloin tip is processed with the cover on.

a. Remove the kneecap by cutting parallel with the face of the sirloin tip.

b. Remove any excess fat.

c. Cut the tip into steaks or roasts.

d. Use any trimmings for stew beef or ground beef.

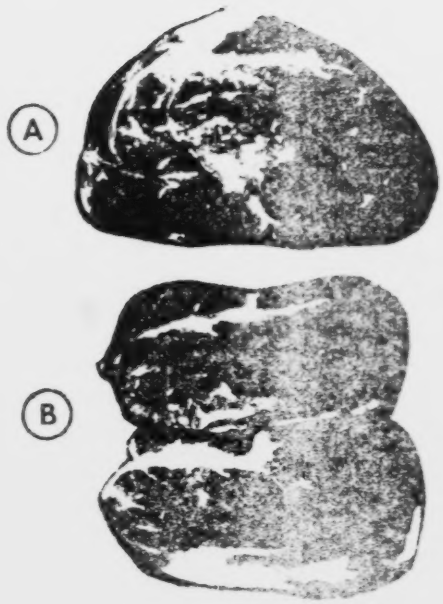

Figure 4–14. Merchandising sirloin tip with covering on.

Figure 4-14. The sirloin tip may also be processed with the cover removed. To remove the cover, follow the natural seam around the sirloin tip. The merchandise the tip as follows:

a. Cut the sirloin tip into roasts of varied weights. Thin, wide slices of cod fat can be placed around roasts and tied for a more desirable finished product.

b. Cut the sirloin tip in varied thickness for steaks.

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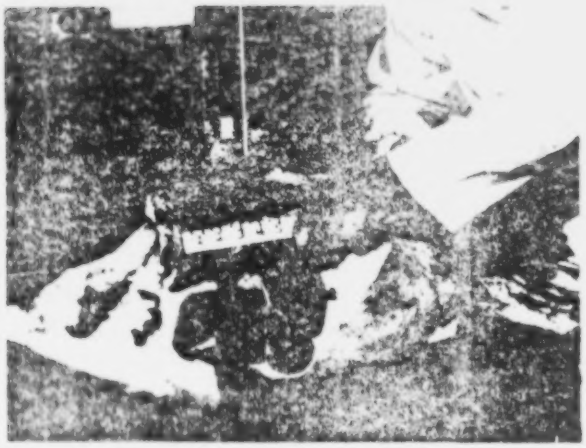


Figure 4–15. Removing aitchbone from round.

Figure 4-15. Remove the aitch (rump) bone section from the round.

a. Mark a line on the top round side 1 inch from aitchbone, using the top point of the aitchbone as a guide.

b. Remove the rump from the round on the bandsaw by cutting through the leg bone at the 1 inch mark.

c. Remove the tailbone and trim.

d. Remove the meat from the exposed cavity of the aitchbone.

e. At this point, you may leave the rump bone in and process as bone-in rump roast or bone it.

f. Remove the aitchbone by following the curvature of the bone.

g. Use trimmings for ground beef.

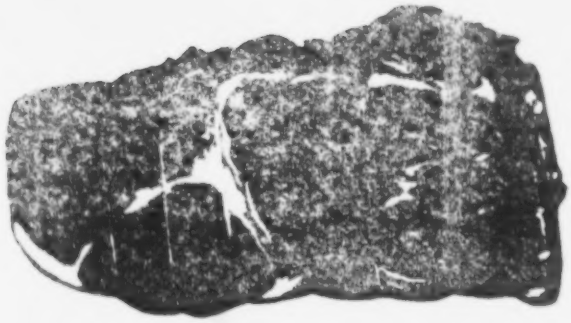


Figure 4–16. Rolled rump roast.

Rump Roast. The finished rolled roast is shown in figure 4-16. Use the following steps in preparing rump roast:

a. Form the boneless rump into a roll.

b. Tie the roll crosswise with roast cord, approximately 1 inch apart, or use netting.

c. Merchandise the roll whole or cut into varied weights.

Figure 4–17. Full round, bone-in.

Bone-In Round. To process bone-in round steaks, refer to figures 4-17, 4-18, and 4-19. Figure 4-17 shows the full bone-in round before processing.

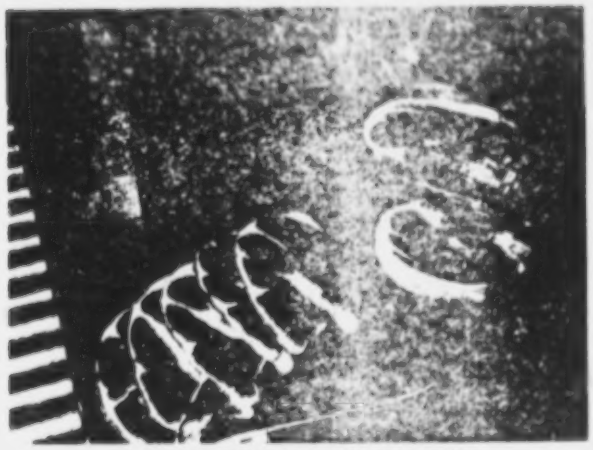


Figure 4–18. Processing bone-in round steaks.

Figure 4-18. To process bone-in round steaks, proceed as follows:

a. Slice the round steak 1/2 to 3/4 inch thick, down through the lymph gland.

b. Next, slice one Swiss steak 3/4 to 1 inch thick.

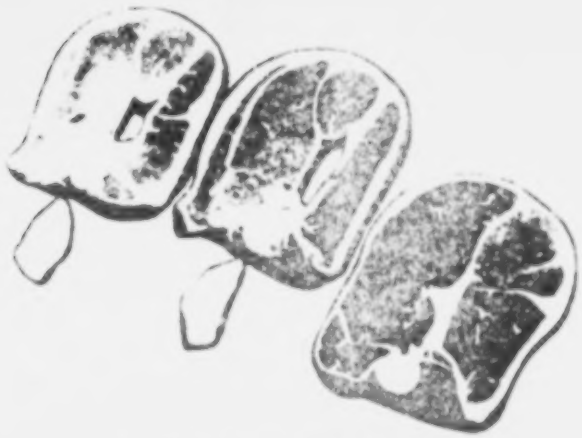


Figure 4–19. Trimming bone-in round steaks.

Figure 4-19. Remove excess fat and the gland from round steaks before merchandising.

Figure 4-20. Heel of round.

Heel of Round. The heel (fig. 4-20) is the back portion of the round that includes a portion of the shank meat. The heel is merchandised as pot roast, stew beef, or ground beef.

Figure 4-21. Boning round from hind shank.

Figure 4-21. Separate the round from the hind shank by cutting below the gambrel cord to the natural seam.

Processing Beef Round into Boneless Cuts. Refer to figures 4-21 through 4-28. Remove the aitch (rump) bone as we showed you in figure 4-15.

Figure 4-22. Boning round from leg bone.

Figure 4-22. Bone the round from the leg bone.

a. Follow the natural seam to the leg bone.

b. Continue cutting around the leg bone down to the ball portion of the leg bone. The weight of the round will assist in the separation of the leg bone and round.

c. Release the round by cutting around the end of the leg bone.

Figure 4-23. To process full round boneless cuts, proceed as follows:

a. Slice the steaks 1/2 inch thick until you reach the heavy deposit of fat in the center of the round.

b. Trim this excess fat and any discoloration from steaks before merchandising.

c. Merchandise the remainder of round as roast, steak, and stew beef.

Processing the Individual Muscles of the Round. To separate the round and process individual cuts, refer to figures 4-24 through 4-27.

Figure 4-24. To separate the top round from bottom round proceed as follows:

a. Separate the top (inside) round from the bottom (outside) round by following the natural seams.

b. Leave the eye of round attached to the bottom round.

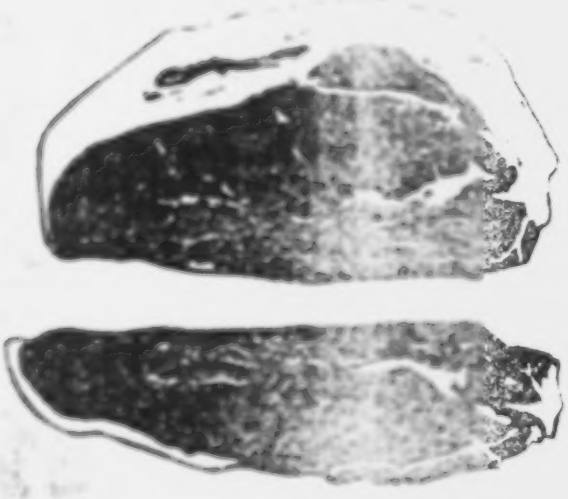


Figure 4-25. In processing the top round, proceed as follows:

a. Remove any discoloration and excess fat found on the outside.

b. Merchandise the round as steak or roast.

c. Cut these steaks 1/2 inch thick.

d. Cut the roasts lengthwise (with the grain of the meat) to give a uniform crossgrain carving when they are cooked.

e. Use the back portion for stew beef or ground beef.

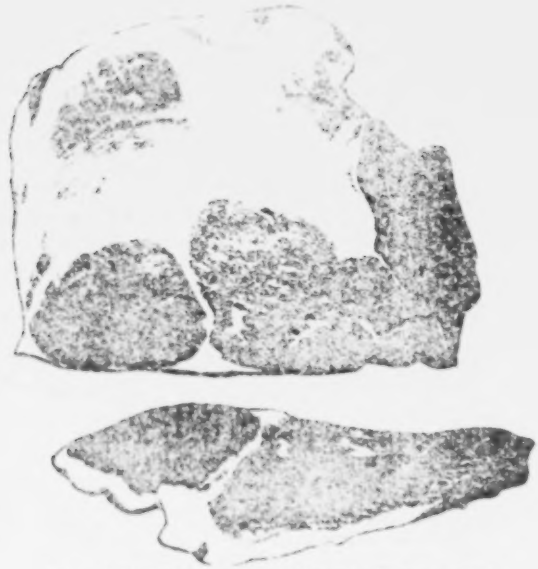


Figure 4–26. Full bottom (outside) round with eye attached.

Figure 4-26. Process the full bottom (eye of round and bottom round as one unit) round as follows:

a. Remove the popliteal lymph gland.

b. Remove the silver strip located at the seam where the sirloin tip was separated from the bottom round.

c. Cut these steaks 1/2 inch thick.

d. Cut the roasts into various sizes.

e. Use trimmings for stew beef or ground beef.

Figure 4–27. Processed bottom round.

Figure 4-27 shows the bottom round processed further into retail cuts.

a. Beef round bottom round rump roast.

b. Beef round eye round roast.

c. Beef round eye round steak.

d. Beef round bottom round roast.

e. Beef round bottom round steak.

f. Beef cube steak (derived from the portion of the sirloin tip).

g. Stew beef from the horseshoe muscle.

h. Process all remaining trimmings into ground beef.

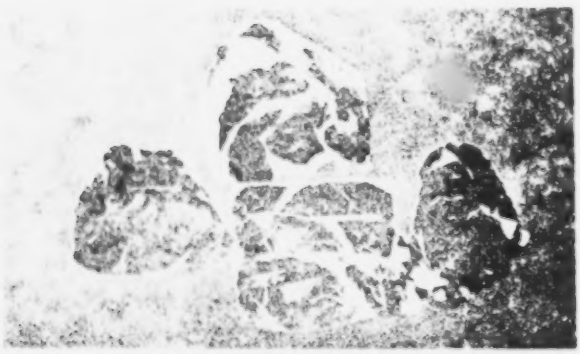


Figure 4–28. Sirloin tip processed lengthwise.

Figure 4-28 shows the sirloin tip processed lengthwise for easier carving by the customer.

a. Split the sirloin tip lengthwise.

b. Use the portion next to the top round for roast.

c. Slice the remaining portion 1/2 to 3/4 inches thick for steak.

d. Process the balance into beef cube steak or ground beef 82 percent.

Figure 4–29. Cuts received from beef round.

Cuts Received from Beef Round. Figure 4-29 shows and lists the standard retail cuts received from the round.

a. Rump roast, boneless.
b. Round steak.
c. Round swiss steak.
d. Heel of round roast.
e. Round tip steak (cap on).
f. Round tip steak (cap off).
g. Round tip steaks (wafer thin, 1/8 inch thick).
h. Bottom round steak, eye removed.
i. Round tip roast (cut lengthwise).
j. Round tip steaks (sliced from tip, processed lengthwise).
k. Round bottom round rump roast.
l. Round bottom round roast.
m. Round top round roast.
n. Round top round steak.
o. Eye of round roast.
p. Eye of round steak.
q. Bottom round, eye still attached.
r. Beef cube steak.
s. Beef stew.
t. Beef shank cross cuts.

Figure 4-30. Trimmed loin of beef.

Full Loin. The full loin (fig. 4-30) consists of two wholesale cuts, the sirloin (a) and the short loin (b). To separate the sirloin (a) from the short loin (b), locate the end of the hipbone (pinbone) and cut parallel with the face of the sirloin end. To process the sirloin and short loin, refer to figures 4-31 through 4-35.

Figure 4-31. In processing sirloin from full loin merchandise as follows:

a. Cut these steaks of uniform thickness by keeping the sirloin pressed against the guide.

b. Cut these steaks 1/2 to 1½ inches thick (according to customer demand).

c. Trim all individual steaks of excess fat and bone.

d. Remove any bone dust before merchandising.

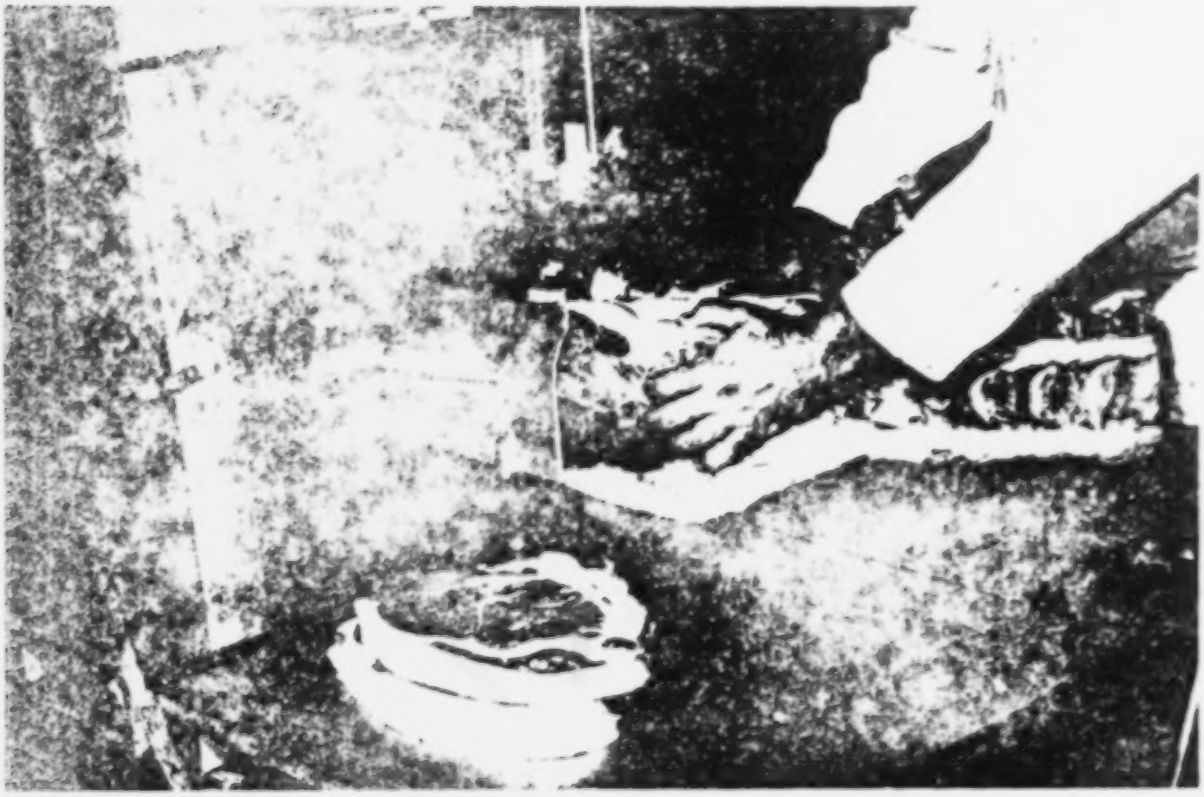


Figure 4-31. **Processing sirloin.**

Figure 4–32. Sirloin and pinbone steaks, trimmed and untrimmed.

Figure 4-32. Notice the whole sirloin (top center); pinbone steak, trimmed and untrimmed (center); and sirloin steak, trimmed and untrimmed (bottom). You can bone and merchandise the pinbone sirloin as top loin steak boneless and tenderloin.

Figure 4–33. Trimmed short loin.

Figure 4-33. Trim the short loin as follows:

a. Remove the excess chine bone.

b. Trim the backbone to remove any discoloration and sharp bones.

c. Remove any excess flank meat and remove any tails that exceed 1 inch before cutting into steaks.

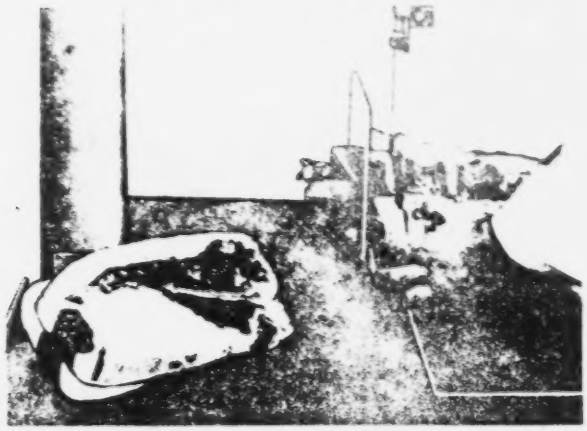


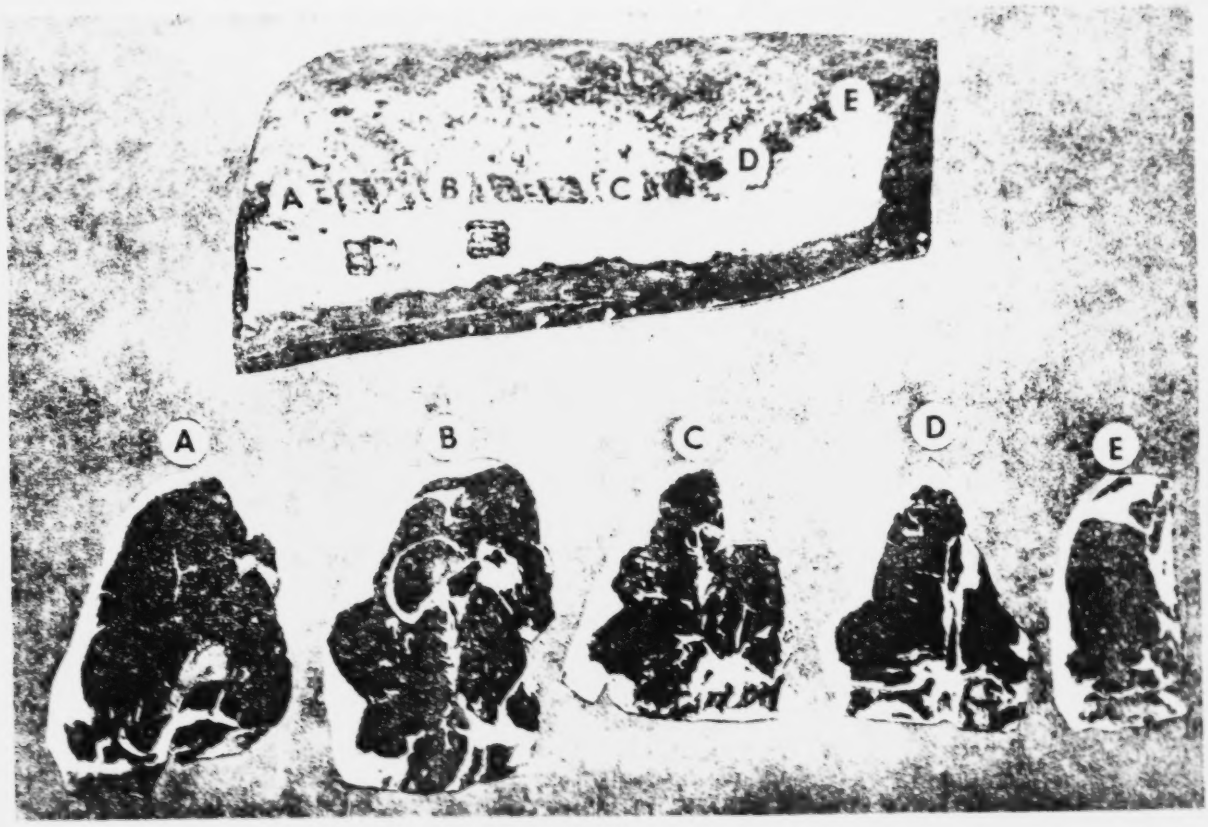
Figure 4–34. Processing short loin.

Figure 4-34. To process the short loin, proceed as follows:

a. Cut steaks of uniform thickness by keeping the short loin pressed against the guide.

b. Cut porterhouse and T-bone steaks 1/2 to 1½ inches thick and top loin steaks 3/4 inch thick. However, the actual thickness of the steaks depends upon customer demand.

c. Remove any bone dust.



The upper cut is the trimmed loin of beef, showing location of steaks:

A. Sirloin
B. Porterhouse
C. T-bone
d. Top loin

The lower cuts are steaks cut from loin of beef:

A. Sirloin, cut from large end of loin.
B. Porterhouse, cut from large end of short loin. A large tenderloin is characteristic of porterhousee steaks.
C. T-bone, cut after porterhouse has been removed down to point where tenderloin becomes thin. A smaller tenderloin is characteristic of T-bone steaks.
D. Top loin steak, the remaining portion of short loin. Top loin steaks are characterized by very little or no tenderloin.

Figure 4–35. Trimmed loin and steaks.

Figure 4-35. Trimmed loin and steaks. The upper cut is the trimmed loin of beef, showing location of steaks. Shown below are the individual steaks derived from the loin:

a. Sirloin, cut from large end of loin.

b. Pinbone sirloin, cut from the end of the hipbone.

c. Porterhouse, cut from large end of short loin. A large tenderloin is characteristic of porterhouse steaks.

d. T-bone, cut after porterhouse has been removed dowr to point where tenderloin becomes thin. A smaller tenderloin is characteristic of T-bone steaks.

e. Top loin steak—the remaining portion of short loin. Top loin steaks are characterized by very little or no tenderloin.

The shell full loin may be processed as bone-in or boneless cuts.

Figure 4–36. Shell full loin.

Figure 4-36. Process the shell full loin bone-in from the full loin.

a. Remove the tenderloin from the full loin.

b. Loosen the tenderloin from the chine bone and hipbone.

c. Then following the contour of the finger bones and the hipbone, lift the tenderloin from the full loin.

d. Place the loin against the guide, cut steaks 1/2 to 1½ inches thick according to customer demand; trim according to AFCOMS trim policy.

e. Process the sirloin section. Label the steaks as beef loin shell sirloin steaks.

f. Process the loin section by first removing the chine bone by using the spinal cord cavity as a guide.

g. Remove all excess flank meat that exceeds 1 inch from the eye of the loin.

h. Merchandise these steaks as beef loin top loin steaks.

Figure 4–37. Processed tenderloin.

Figure 4-37. Shows the tenderloin:

a. Full tenderloin (may be trimmed and sold whole).

b. Tenderloin roast taken from the larger section of the tenderloin.

c. Tenderloin steak.

d. Tenderloin steaks (butterflied).

e. Tenderloin tips taken from the small end of the tenderloin.

Figure 4–38. Shell sirloin processed.

Figure 4-38. Shell sirloin is shown separated from the full shell loin.

a. Separate at the end of the hipbone.

b. Remove the hipbone from the shell sirloin.

c. Merchandise as top sirloin steak, boneless.

d. Sell whole as roast or split lengthwise for smaller roasts for easier carving. Label as top sirloin roast, boneless.

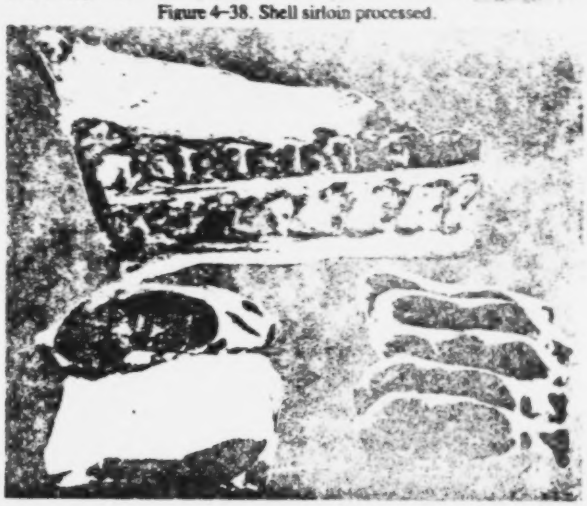


Figure 4–39. Shell top loin.

Figure 4-39. Shell top loin section after shell sirloin is removed.

a. Remove any excess flank meat that exceeds 1 inch from the top loin eye muscle.

b. Bone the shell top loin area. Be careful not to cut into the meat.

c. Process as beef top loin roast, boneless, whole, or cut to desired thickness.

d. Process into beef top loin boneless steaks, cut 1/2 to 1¼ inches thick.

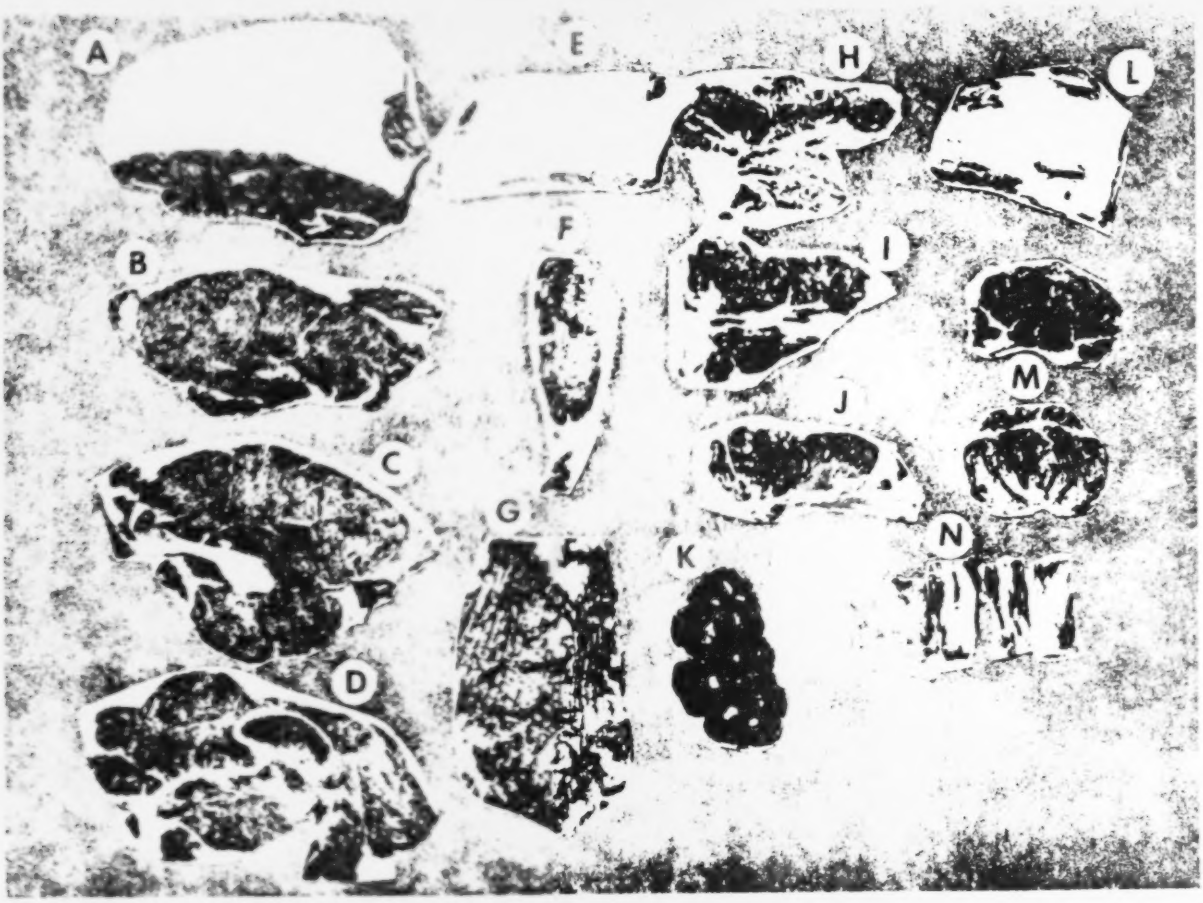


Figure 4-40. Cuts received from the beef loin.

Cuts received from the beef loin. Figure 4-40 shows and lists the standard retail cuts received from the beef loin:

a. Beef loin top sirloin roast, boneless.
b. Beef loin top sirloin steak, boneless.
c. Beef loin sirloin steak.
d. Beef loin sirloin pinbone steak.
e. Beef loin top loin roast, boneless.
f. Beef loin top loin steak, boneless.
g. Beef flank steak.
h. Beef loin porterhouse steak.
i. Beef loin T-bone steak.
j. Beef top T-bone steak.
k. Beef kidney.
l. Beef loin tenderloin roast.
m. Beef loin tenderloin steak.
n. Beef loin tenderloin tips.

Exercises (022):

1. Which type of steak has the grain running lengthwise?

2. Name the steak which can be merchandised with the outside covering intact or removed.

3. The retail cut that has a gland in the center is _____ _____ .

4. The cut of beef that has shank meat attached is the _____ _____ _____ .

5. How do you merchandise heel of round?

6. The silver strip separates the _____ _____ from the _____

7. List the various retail cuts obtained from the bottom round.

8. To separate the sirloin from the full loin, cut parallel with the face of the sirloin end of the _____ .

9. What is the first step in processing the short loin?

10. Name the retail cuts processed from the short loin.

11. A large tenderloin is characteristic of a _____ steak.

12. The last steak processed from the short loin is _____ _____ .

13. The following are steps in separating top round from bottom round and processing both. Sequence these steps correctly.

    a. Cut the steaks 1/2 inch thick.
    b. Follow the natural seams in separating the top round from the bottom round.
    c. Use the back portion for stew beef or ground beef.
    d. Remove any discoloration and excess fat from the outside.
    e. Leave the eye of round attached to the bottom round.
    f. Cut the roasts lengthwise (with the grain of the meat) to give a uniform crossgrain carving when they are cooked.
    g. Merchandise the round as steak or roast.

023. Specify preliminary breaking procedures of the forequarter and methods of final rib processing, and identify types of retail cuts which can be processed from the forequarter.

Preliminary Forequarter Breaking. Refer to figures 4-41, 4-42, and 4-43 for preliminary breaking procedures.

Figure 4-41. While the forequarter is hanging on the rail, proceed as follows:

a. Remove the spinal cord.

b. Trim off any dark exposed surface, especially in the neck area. Do not use this for ground beef.

c. Remove any meat in the cavity of the chine bone, trim, and use it for ground beef.

d. Remove the skirt meat from the inside of the forequarter on the plate section by cutting a thin strip from the thin edge to untie the membrane; pulling the membrane from the inside and the outside of the skirt; and cutting under the skirt, staying close to the rib bones and over the rib cartilages.

Figure 4-41. Breaking forequarter.

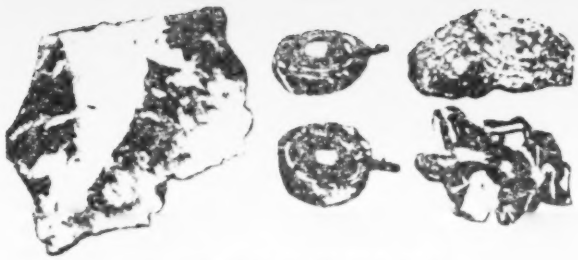


Figure 4–42. Merchandising the skirt meat.

Figure 4-42. To prepare for merchandising, remove any excess fat from the meat. The skirt may be merchandised in any one of the following ways:

a. As skirt steak (filet of steak, center of fig. 4-42). To prepare the skirt steak, cut a strip of cod fat approximately 1/2 inch square; place the strip of fat crosswise on the skirt meat and roll it lengthwise, so that the fat will be in the center; insert toothpicks to hold the roll together and slice between the toothpicks to make individual cuts.

b. As ground beef (top right in fig. 4-42).

c. Beef stew (bottom right in fig. 4-42).

Figure 4–43. Separating wing section from crosscut chuck.

Figure 4-43. Count ~~four~~ five ribs from the neck and pierce between the ~~fourth~~ fifth and ~~fifth~~ sixth ribs; then proceed as follows:

a. Cut between the fourth and fifth ribs, parallel with the rib bones.

b. Saw through the breastbone and the backbone to separate the wing section from the crosscut section.

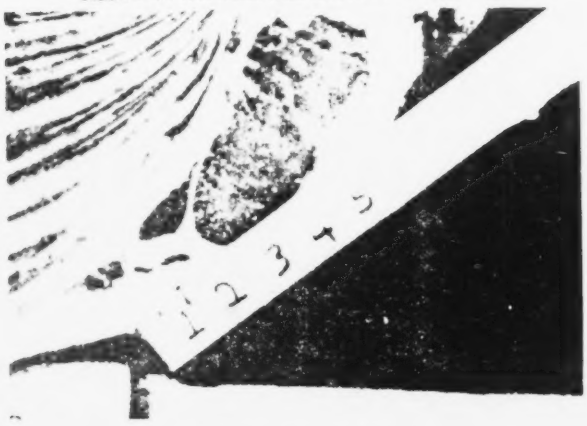


Figure 4–44. Marking the rib.

Processing the Rib (Wing Section). Figures 4-44 through 4-54 show processing of the wing section.

Figure 4-44. Measure 2 inches from the rib eye on the small end and make a landmark to be used in separating the plate from the rib.

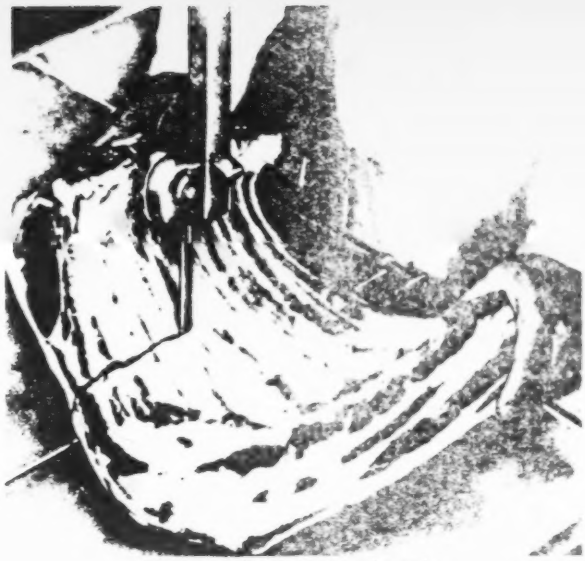


Figure 4–45. Separating plate from rib.

Figure 4-45. To remove the plate (navel), saw from the mark, keeping the line of cut parallel with the back of the rib.

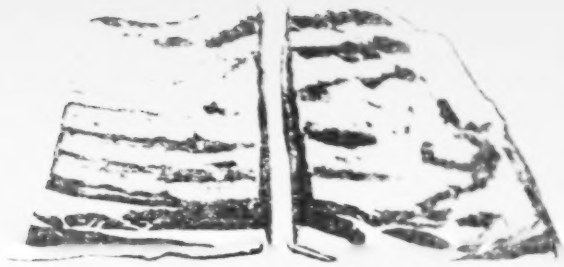


Figure 4–46. Processing short ribs and short plate.

Figure 4-46. To prepare shortribs (left in fig. 4-46), cut across the ribs in approximately 2-inch lengths, then cut between each rib and remove any excess fat.

To prepare the short plate (right in fig. 4-46), cut in between each rib bone and through the rib cartilages, remove the excess fat, and merchandise it as soup meat with bone in, or bone it and grind the meat.

Figure 4–47. Merchandising cuts from plate.

Figure 4-47. Merchandise the plate in any of the following ways:

a. With the plate boned, excess fat removed and used for ground beef.

b. As stew beef (bottom left in fig. 4-47).

c. As skirt steak processed from the skirt meat. The skirt meat is located on the inside of the short plate (second from the left in fig. 4-47).

d. As soup meat (with bone in, processed from the short plate) with the top layer of meat and excess fat remaining on the cut (third from left in fig. 4-47).

e. As short plate with the top layer of lean meat and excess fat removed (bottom center of fig. 4-47).

f. As short ribs processed from 5 through 8, cut full length for barbecuing. The remaining ribs usually have too much fat.

g. As short ribs processed from ribs 5 through 8 for stewing or braising.

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Figure 4-48. Trimming rib.

Figure 4-48. Remove the chine bone and trim featherbones, proceeding as follows:

a. Hold the rib at an angle to cut at the base of the chine bone (where the chine bone contacts the spinal cord channel).

b. Close the guide on the saw to remove any sharp bones and discoloration from featherbones.

c. Do not allow the saw blade to penetrate into the meat.

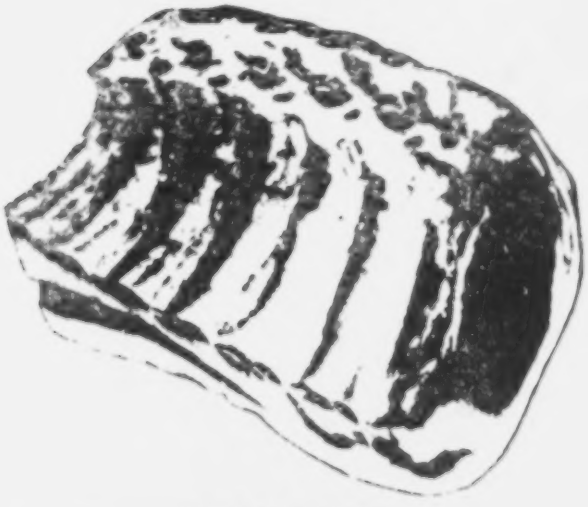

Figure 4-49. Trimmed rib.

Figure 4-49. Then process the trimmed rib into steaks or roasts.

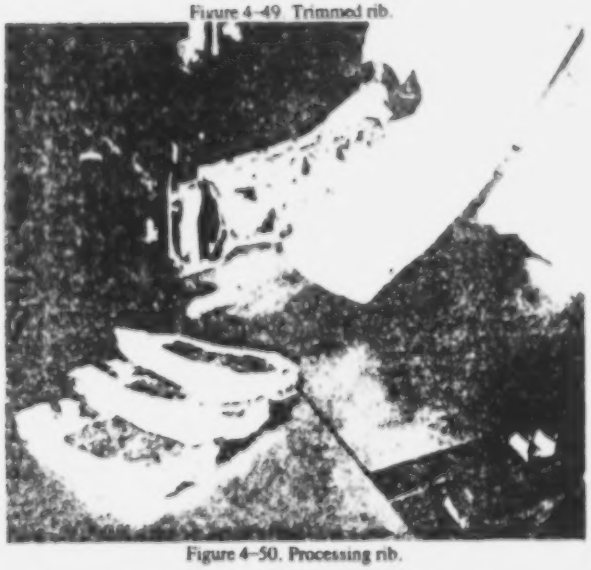

Figure 4-50. Processing rib.

Figure 4-50. Use the following steps in processing the rib section into steaks and roasts:

a. Cut ribs 11 and 12 into top loin steak.

b. Cut the next two ribs, 9 and 10, into steak or roast.

c. Use ribs 7 and 8 for rib steaks.

d. Bone the remaining two ribs, 5 and 6, for rib eye steaks, and merchandise rib bones as back ribs.

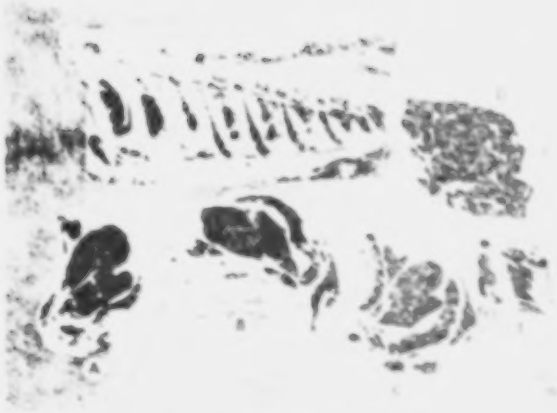

Figure 4-51. Retail cuts trimmed.

Figure 4-51. Shows rib section consisting of ribs 5 through 12. Trim retail cuts according to AFCOMS trim policy, no less than 1/4 inch, no more than 1/2-inch covering of fat.

a. Top loin steak.
b. Rib roast.
c. Rib steak.
d. Rib eye steak.
e. Back ribs.

Figure 4-52. Merchandising rib roast.

Figure 4-52. Use the following steps in preparing rib roast:

a. Remove the backbone, the featherbones, and the backstrap (left, fig. 4-52).

b. Place a thin (1/4 inch) layer of fat where bones have been removed (center, fig. 4-52).

c. Tie the fat into place (right, fig. 4-52). This fat will prevent excess shrinkage in cooking and facilitate carving.

Figure 4-53. Boning rib.

Figure 4-53. To bone standing ribs, proceed as follows:

a. Cut the meat from the rib bones down to the featherbones.

b. Release the meat from the featherbones.

c. Lift the boneless rib from the cradle of bones.

d. Remove the backstrap from the natural seam.

Figure 4-54. Merchandising boneless rib.

Figure 4-54. The boneless rib may be processed into any of the following retail cuts:

a. As boneless rib roast (top left, fig. 4-54). Roasts may be merchandised as flat or rolled.

b. As boneless rib steak (bottom, fig. 4-54).

c. As rib eye roast (top right, fig. 4-54) or rib eye steak (bottom right, 4-54). To process the boneless rib into rib eye, remove the outer covering by following the natural seams. Merchandise the lean trimmings from the cover as stew beef or ground beef.

Exercises (023):

Identify each true statement and correct those that are false.

1. The membrane is removed from the plate section before processing.

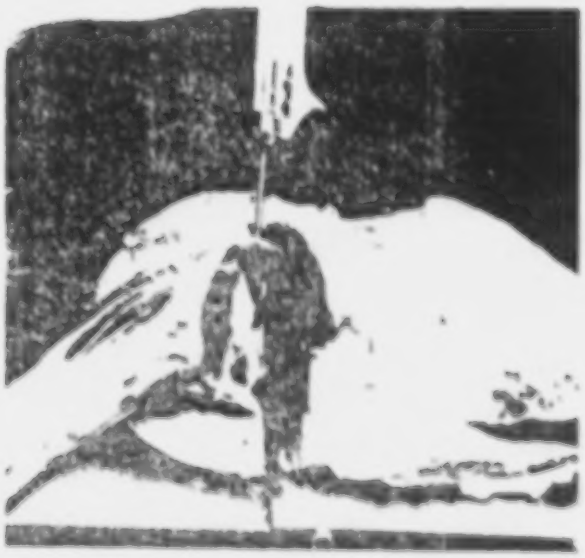

Figure 4-55. Removing foreshank and brisket from crosscut chuck.

2. The wing section and crosscut section is separated between the fifth and sixth ribs.

3. Separate the plate and rib 5 inches from the chine bone on the small end in a line parallel with the back of the rib.

4. The rib section yields rib steak, rib eye steaks, and short ribs.

5. The backstrap is removed from boneless rib cuts.

6. From the following list ways to merchandise the short plate, select those which are acceptable.

___ a. As soup meat with the top layer of meat and excess fat remaining on the cut.
___ b. As short ribs cut full length for barbecuing.
___ c. As skirt steak processed from the skirt meat located on the outside of the short plate.
___ d. As stew beef.
___ e. With the plate boned and used for ground beef, with excess fat removed or not, depending on the grade of ground beef intended.
___ f. As soup meat with the top layer of meat and excess fat trimmed from the cut.
___ g. As short ribs cut for stewing or braising.
___ h. As short plate with the top layer of lean meat and excess fat removed.

7. Name the retail cuts which can be processed from the rib section (ribs 5 through 12).

8. List the steps in preparing rib roast.

9. What are the retail cuts which can be processed from boneless rib?

5 /

Figure 4-56. Processing foreshank and brisket.

024. Specify various steps in processing the brisket and chuck section of the forequarter; resequence correctly the steps in processing the arm section into roasts and steaks.

Processing the Foreshank and Brisket. Figures 4-55, 4-56, and 4-57 show brisket processing and merchandising.

Figure 4-55. Remove the foreshank and brisket from the crosscut chuck; then proceed as follows:

a. Locate the knuckle and cut 1/2 inch above the knuckle on the shoulder side. By cutting 1/2 inch above the knuckle, you will avoid a large bone in the first arm roast.

b. Keep the line of cut parallel to the back of the chuck.

c. Saw through the arm and rib bones.

Figure 4-56. Separate the foreshank from the brisket by following the natural seam, located underneath the elbow bone (note dotted line in fig. 4-56). Merchandise the foreshank as boneless stew beef, ground beef, or soupbones with meat.

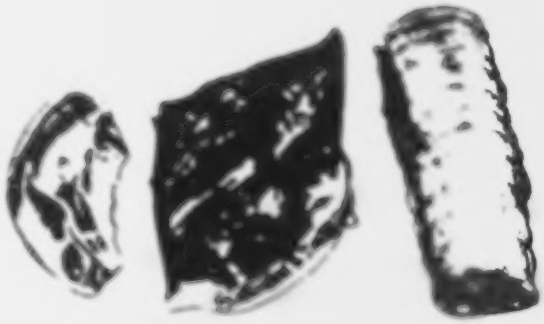

Figure 4-57. Merchandising brisket.

Figure 4-57. Merchandise the brisket in any of the following ways:

a. Bone-in brisket (left, fig. 4-57) may be used as bone-in soup meat.

b. Boneless flat brisket (center) may be used for roasts of various sizes, stew beef, or ground beef.

c. As rolled brisket, boneless, with the deckle removed (right, fig. 4-57). To prepare large briskets for rolling, cut the brisket lengthwise, reverse one piece, and then tie the two pieces together with the fat sides out. You can roll two small briskets and tie them together for a roast.

Processing the Chuck Section. For processing of these cuts, refer to figures 4-58 through 4-62.

Figure 4–58. Separating chuck and shoulder.

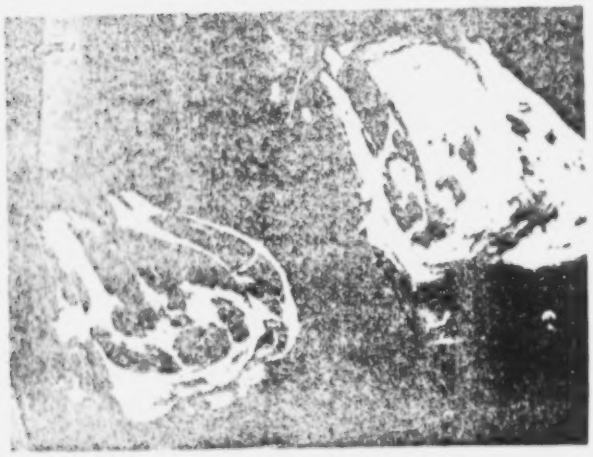

Figure 4–59. Processing arm roasts and steaks.

Figure 4–60. Cuts processed from shoulder.

Figure 4-58. Separate the chuck from the shoulder. You can do this when either the chuck (left in fig. 4-58) or the shoulder (right in the same figure) is needed for processing at a later date. Keep this procedure to a minimum, due to the amount of shrinkage and discoloration of the exposed areas.

a. Locate the blade cartilage in the face of the chuck and mark approximately 1 inch on the arm side.

b. Locate the ball portion of the ball-and-socket joint of the arm on the neck end and mark 1/2 inch from the ball on the chuck side.

c. Connect the two marks and cut parallel with the back of chuck to complete the separation.

Figure 4-59. Shows the shoulder section being processed. Start the cutting from the shoulder (arm) section.

a. Cut from the round armbone side back to 1 inch from the blade cartilage.

b. Determine the thickness of roasts and steaks according to patron demand.

c. Remove any bone dust.

d. Process soupbones with meat from the large ball bone.

e. Bone the remaining portion of the arm and use it for roasts, steaks, stew beef, or ground beef.

Figure 4-60. Notice the retail cuts processed from the shoulder section. They are as follows:

a. Beef chuck arm pot roast. This cut is the last cut processed from the shoulder side. The roast consists of a portion of the bladebone, and the flanken style ribs are left attached.

b. Beef soupbone with meat.

c. Beef chuck shoulder pot roast, boneless.

d. Beef chuck arm pot roast.

e. Beef chuck flanken-style rib.

Process all roasts as steaks according to patron demand.

Figure 4-61. Cut the chuck into roasts and steaks as follows:

a. Trim any excess chine bone.

b. Trim the backbone lightly to brighten its appearance.

c. Begin cutting from the face of the chuck perpendicular to the back of the chuck.

d. Cut chuck roasts and steaks until you reach the heavy deposit of fat in the neck area.

e. Remove any bone dust.

f. Use the neck for roast, stew beef, or ground beef.

Figure 4-62. The retail cuts processed from the chuck section are as follows:

a. Beef chuck blade roast, cut from the fourth rib, is identified by the presence of the blade cartilage.

b. Beef chuck 7-bone pot roast, cut from the first, second, and third ribs is identified by the portion of the bladebone resembling the number 7.

c. Beef chuck neck pot roast is derived from 6th and 7th neck vertebrae, excluding the atlas bone.

Use the remaining lean meat for beef stew or ground beef.

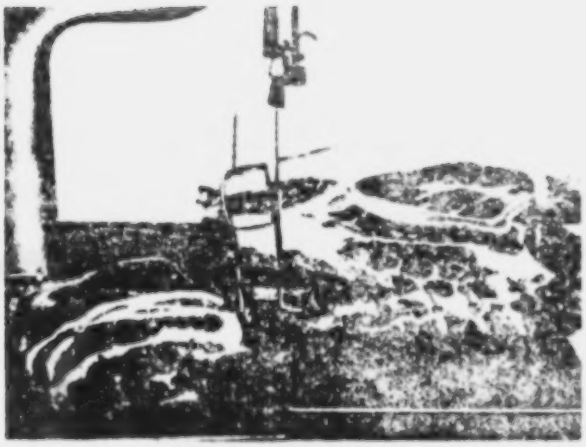

Figure 4-61. Processing chuck.

Figure 4-62. Cuts processed from chuck.

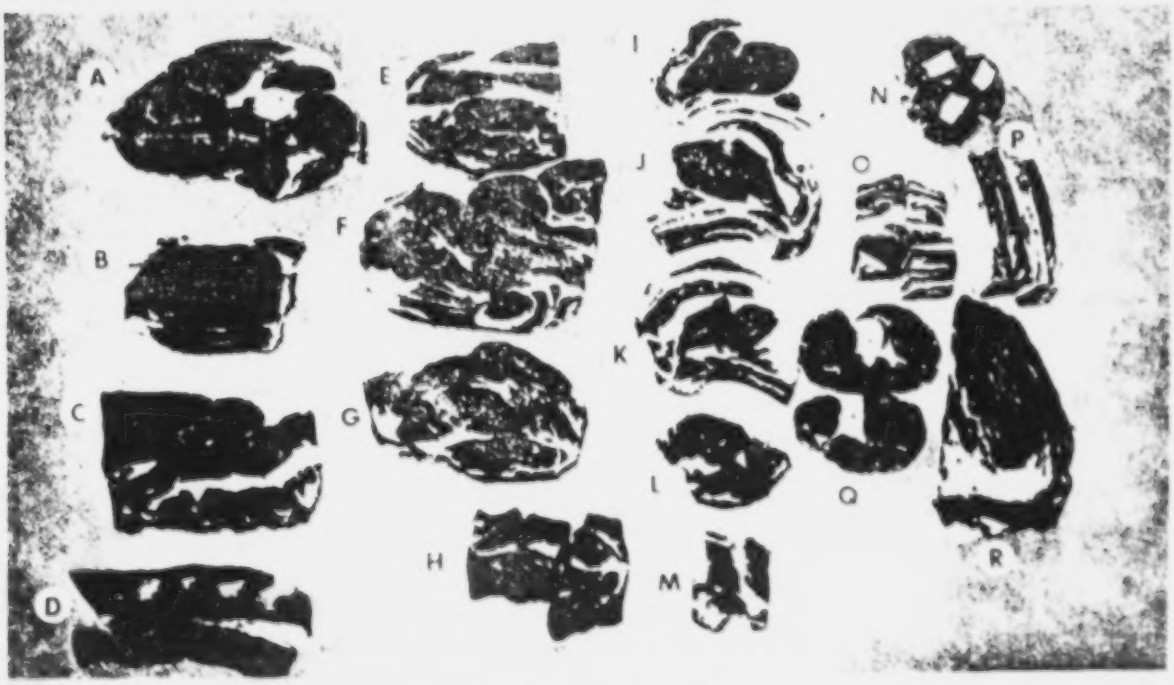

Figure 4-63. Cuts processed from the forequarter.

Figure 4-63. The retail cuts processed from the forequarter are as follows:

a. Beef chuck arm pot roast.
b. Beef chuck shoulder pot roast, boneless.
c. Beef chuck arm pot roast.
d. Beef chuck flanken style rib.
e. Beef chuck blade roast.
f. Beef chuck 7-bone pot roast.
g. Beef chuck neck pot roast.
h. Beef chuck neckbones.
i. Beef top loin.
j. Beef rib roast, small end.
k. Beef rib large end steak.
l. Beef rib eye steak.
m. Beef rib back ribs.
n. Beef plate skirt steak rolls.
o. Beef plate short ribs.
p. Beef plate short ribs for barbecuing.
q. Beef shank cross cuts.
r. Beef brisket whole, boneless.

All processed cuts shown can be cut either as roast or steaks.

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Figure 4-64. Processing boneless beef chuck.

Figure 4-64. Process the boneless chuck section from the forequarter as follows:

a. Separate the beef chuck area from the beef forequarter by cutting between the 4th and 5th ribs.

b. Saw through the backbone leaving the chuck attached by the breastbone.

c. Locate the shoulder muscle and follow the natural seam down to the bladebone.

d. Remove the shoulder, following the contour of the mock tender.

e. Make the separation cut where the chuck and the shoulder come together.

Figure 4-65. Cuts from boneless shoulder.

Figure 4-65. Retail cuts derived from the shoulder section of the forequarter are as follows:

a. Beef cube steak.

b. Beef chuck mock tender.

c. Beef chuck shoulder pot roast, boneless.

d. Beef chuck shoulder steak (swiss), boneless.

e. Beef chuck top blade roast, boneless.

f. Beef chuck top blade steak, boneless.

Figure 4–66. Processed cuts from boneless chuck.

Figure 4-66. Notice the retail cuts processed from the chuck section of the forequarter:

a. Beef brisket whole, boneless.
b. Beef chuck neck pot roast, boneless.
c. Beef stew.
d. Beef chuck short ribs.
e. Beef neckbones.
f. Beef chuck eye roast boneless.
g. Beef chuck eye steak, boneless.

Exercises (024):

1. To avoid a large bone in the first arm roast, separate the foreshank and brisket from the crosscut chuck _____ inch above the knuckle on the shoulder side.

2. Separate the _____ from _____ 1 inch from the blade cartilage.

3. The first cut processed from the chuck section is _____ roast.

4. The following are steps in correct processing of the arm section into roasts and steaks. Resequence their order from the incorrect one given, deleting any steps not needed:

   a. Determine the thickness of roasts or steaks according to patron demand.

   b. Bone the remaining portion of arm, and use it for roasts, stew beef, and ground beef.

   c. Make ground beef, roasts, steaks, and stew beef out of the remaining portion of arm, after boning it.

   d. Cut from the round armbone side back to the large ball bone; then slice carefully through its center.

   e. Remove any bone dust.

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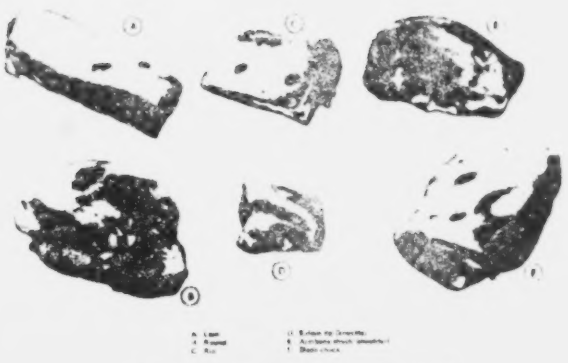


Figure 4–67. Major subprimal cuts of beef

5. List the proper cuts for processing the foreshank, brisket, and chuck portions of the forequarter.

6. In separating the chuck from the shoulder, state where you should make the cut.

7. Name the retail cuts processed from the shoulder section.

025. Identify cutting and packing technqiues concerning fabricated, subprimal cuts of beef.

Fabricated Cuts of Beef. The major subprimal cuts of beef are shown in figure 4-67. Market-ready cuts may vary depending on the packer's production methods. For example, some packers divide the full loin (a) into three cuts—sirloin butt, short loin, and butt tenderloin. For a detailed description of each cut, follow figures 4-68 through 4-73.

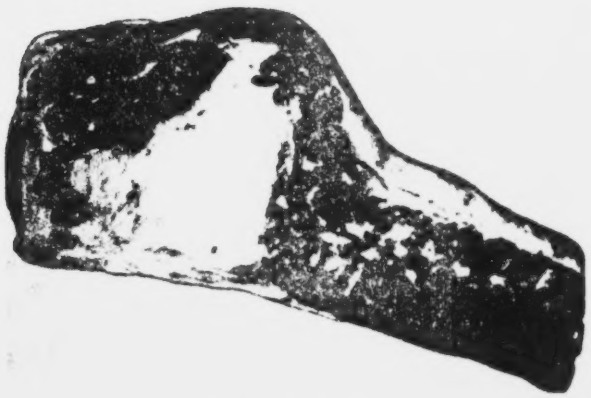


Figure 4–68. Full loin.

Figure 4-68. The full loin contains the 13th rib where the side was separated between the 12th and 13th ribs. The flank is cut 3 inches above the eye muscle on the rib end, and the tenderloin is trimmed within 1/2 inch of fat. The sirloin end is separated from the rump parallel with the rib end to give the correct loin angle for retail cutting of bone-in sirloin steaks. Fat is trimmed within 1/2 inch. The loins are packed one in a box.

Figure 4–69. Round

Figure 4-69. The hind shank is removed at the stifle joint. The aitch (rump) bone, sacral vertebrae, and tail joints are removed. The round leg bone remains intact. Exterior fat is trimmed to within 1/2 inch. One round is packed in a box with one sirloin tip.

63

Figure 4–70. Rib

Figure 4-70. The rib is separated from the chuck between the fifth and sixth ribs. The rib is separated from the plate 3 inches above the eye of the loin end and 4 inches above the eye of the chuck end. The chine bone is removed along a straight line where the vertebra joins the featherbones. The bladebone remains in. Exterior fat is trimmed to within 1/2 inch. Ribs are packed two in a box.

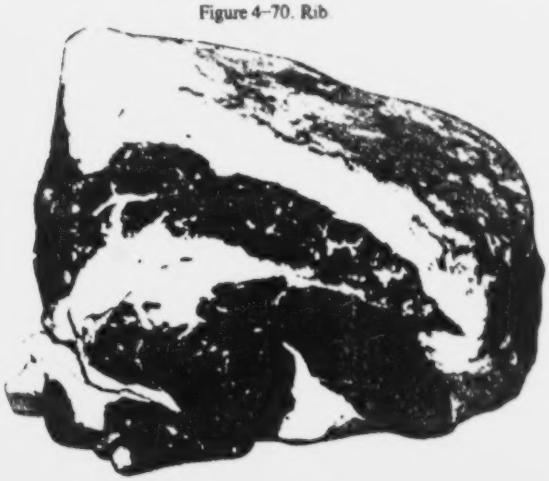


Figure 4–71. Sirloin tip.

Figure 4-71. The sirloin tip is the portion of the primal round that is underneath the round bone. The kneecap and connective tissues are removed. All exterior fat is trimmed within 1/2 inch. The sirloin tip is packed in a box with the round.

Figure 4–72. Arm chuck

Figure 4-72. Armbone chuck (shoulder) is the portion of the square chuck that remains after splitting in half. Exterior fat is removed to within 1/2 inch. The shoulder is packed one in a box with the blade chuck.

Figure 4-73. Blade chuck.

Figure 4-73. The blade chuck is half of the five rib square chuck. The tip of the neck is removed at the atlas joint. The entire throat area is trimmed completely free of blood clots, glands, and surface fat. Exterior fat is trimmed to within 1/2 inch. The blade chuck is packed one in a box with the shoulder.

Exercises (025):

Identify exercises 1 through 4 pertaining to market-ready subprimal cuts as being either true or false. Correct any false statements.

1. One inch of exterior fat is left on all subprimal cuts.

2. The round is packed minus the aitchbone, sacral vertebrae, and tail joints.

3. The rib is separated from the chuck between the fourth and fifth ribs.

4. The sirloin tip and round are packed in separate boxes.

5. Complete the following statements about fabricated cuts of beef:
   a. Some packers divide the full loin into three cuts: sirloin butt, _____ _____, and butt tenderloin.
   b. The portion of the square chuck remaining after splitting in half is the _____ _____ (shoulder).
   c. The _____ _____ is one-half of the five rib square chuck.
   d. The blade chuck is packed one in a box with the _____.

4-4. Cutting Differences between Veal and Mature Beef

Veal differs from mature beef in structure and cutting procedures. These are covered in this section to the degree you need to know them for your job.

026. Classify various types of meat according to related characteristics.

Listed below are the five major cutting differences between veal and mature beef:

a. The first difference is that veal is received in whole sides. Mature beef has been separated into forequarter and hindquarter before receiving.

b. A beef hindquarter contains the last (13th) rib, but we separate a veal side behind the last rib. All ribs remain on the forequarter.

c. Notice the greater size in mature beef (areas 3, 4, and 5, fig. 4-3) than in veal (areas 3 and 4, fig. 4-74). These areas of veal are processed into blade and armbone chops and roast. The corresponding areas of beef yield blade and arm roasts and steaks. In veal these areas are called shoulder, but in mature beef they are called chuck. Rib chops are cut from veal rib; whereas mature beef yields rib steaks and roasts.

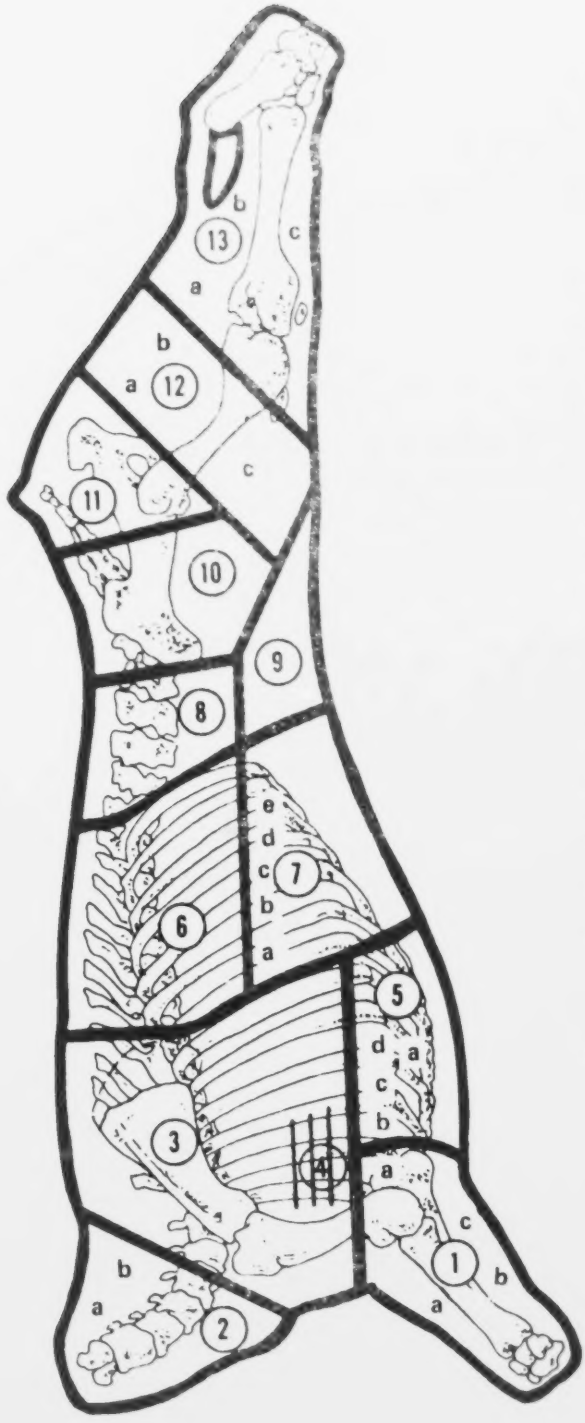
d. In the veal leg, area 12, figure 4-74, notice that you cut completely through the round bone just below the lower end and process cutlets and roasts. In beef, two major cuts are made from this part (fig. 4-2, area 3, the round; and area 4, the sirloin tip). In veal, only one major cut is made.

e. One final difference: Area 13 (veal hindshank, fig. 4-74) is one major cut, while the same beef area is two cuts (area 1, shank and 2, heel of round, fig. 4-3).

Exercises (026):

1. Match each of the types of meat in column B with its related characteristics in column A. Each item in column B may be used more than once.

Column A *Characteristics*	*Column B* *Types of Meat*
____ (1) Received as a whole side.	a. Beef.
____ (2) Rib chops.	b. Veal.
____ (3) Blade roasts.	
____ (4) Forequarter received separated.	
____ (5) Rib roasts.	
____ (6) Round area constitutes single major cut.	
____ (7) Sirloin tip removed separately.	
____ (8) All ribs on forequarter.	



1. Shank
   a. Ground veal
   b. Stew
   c. Chop suey
2. Neck
   a. Ground veal
   b. Chop suey
3. Shoulder, blade bone chops
4. Shoulder, arm bone chops
5. Brisket
   a. Pocket veal roast
   b. Stew
   c. Chop suey
   d. Ground veal
6. Rib-rib chops
7. Breast
   a. Pocket veal roast
   b. Riblets
   c. Stew
   d. Braising
   e. Ground veal
8. Loin-loin chops
9. Flank, ground veal
10. Sirloin-chops or roast
11. Rump, boned and rolled
12. Leg
    a. Cutlets
    b. Roast
    c. Cutlets
13. Shank
    a. Stew
    b. Chop suey
    c. Ground veal

Figure 4–74. Skeletal chart of side of veal with cutting lines.

Figure 4–75. Side of veal.

4-5. Veal Processing

We will consider a number of veal processing steps. The next objective covers separating the hindquarter and forequarter and processing the forequarter.

027. Specify appropriate cutting procedures to accomplish steps in veal forequarter processing.

Separating Hindquarter From Forequarter. To separate the hindquarter and forequarter, forequarter, first place the veal side on the preparation table, meat side down, as shown in figure 4-75. Then trim any discolored surfaces, remove the kidney knob and spinal cord, and hang it tender. Cut through the meat behind the 13th rib, leaving all ribs on the forequarter; then saw through the backbone, as shown in figure 4-76.

Figure 4–76. Separating hindquarter from forequarter.

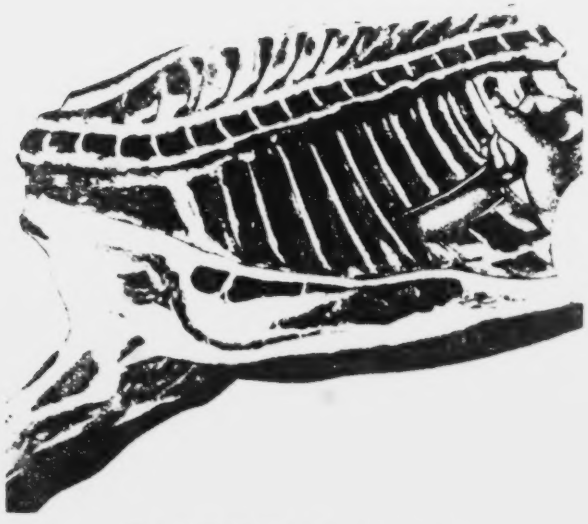


Figure 4–77. Marking off rib from shoulder.

Processing Forequarter. For the forequarter processing steps we discuss next, refer to figures 4-77 through 4-89.

Marking off rib from shoulder. This is shown in figure 4-77. First, count from the neck end and mark between the sixth and seventh ribs. Be sure that the mark penetrates through the meat to the opposite side.

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Figure 4-78. Separating rib and naval from shoulder and breast.

Separating rib and navel from shoulder and breast. This is shown in figure 4-78. Now turn the forequarter over and using the mark as a guide, separate it by cutting between the sixth and the seventh ribs.

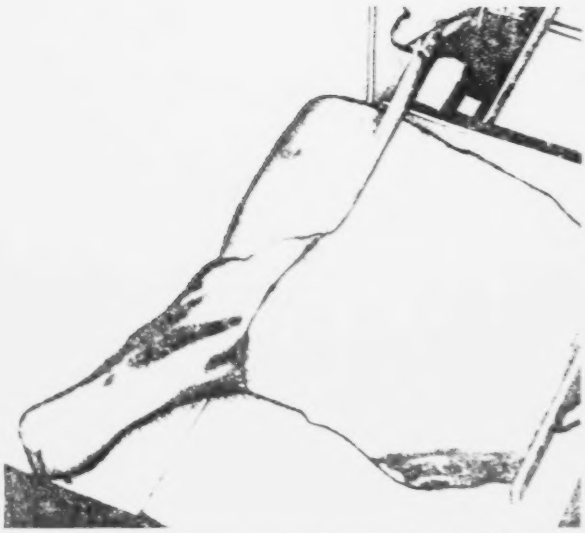


Figure 4-79. Removing foreshank and breast from shoulder.

Removing the foreshank and breast from shoulder. This is shown in figure 4-79. Locate here the joint where the armbone joins the foreshank and mark 1/2 inch on the shoulder side. Be sure to mark off parallel to the back and then separate it. Figure 4-80 shows you different ways to merchandise the foreshank and brisket. These are as follows:

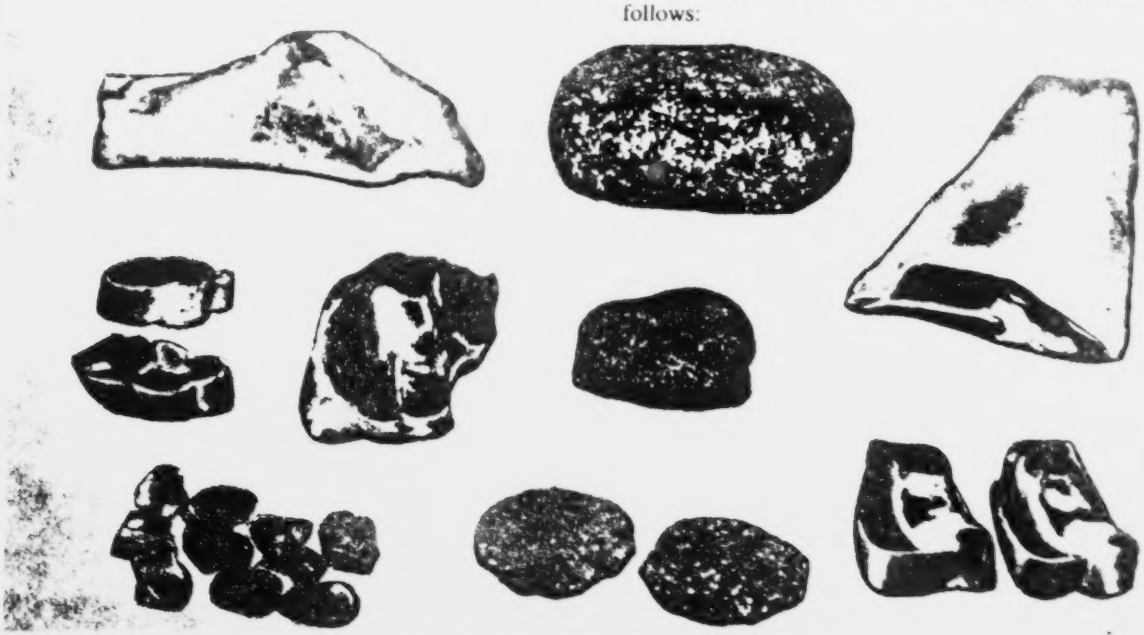


Figure 4-80. Merchandising foreshank and breast.

a. As shank, whole (upper left-hand corner, fig. 4-80).

b. As shank, cut for stew (left side, second from top, fig. 4-80).

c. As veal stew, boneless (lower left-hand corner, fig. 4-80).

d. Using the large knuckle portion of the shank for a soupbone.

e. As ground veal for meat loaf.

f. As ground veal.

g. As patties.

h. As breast, whole for stuffing (cut a pocket in the breast before merchandising).

i. As breast for stewing (cut into small pieces approximately 1 inch wide).

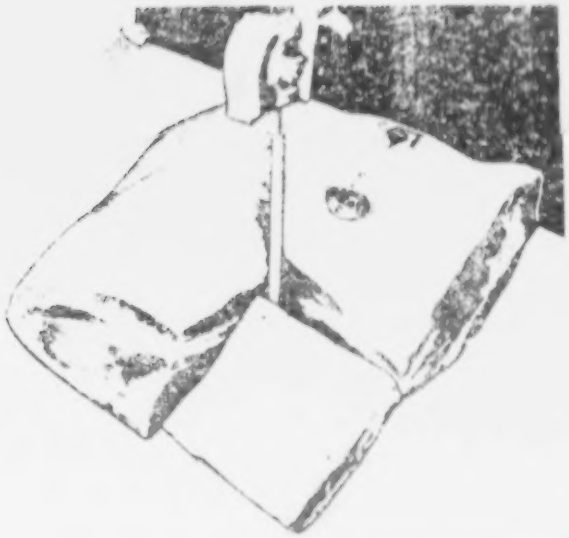


Figure 4-81. Removing three-rib corner from shoulder.

Removing three-rib corner. This is shown in fig. 4-81 and involves the following:

a. Locate the bladebone cartilage and mark approximately 1/2 inch on the shoulder side.

b. Cut parallel to the back through the first three rib bones.

c. Cut parallel to and between the third and fourth ribs to the first line of the cut to remove. The steaks processed from the remaining shoulder will have better eye appeal with the three-rib corner removed.

d. Process the three-rib corner into riblets for stewing or braising, or bone the meat for grinding.

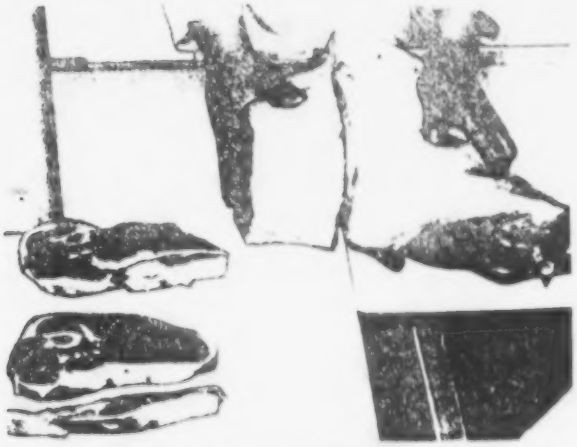


Figure 4-82. Cutting armbone steaks and roasts.

Cutting armbone steaks. This is shown in figure 4-82 and involves the following:

a. Cut steaks from the armbone side down to, but not including, the large knucklebone.

b. Trim any excess fat and bone and remove any bone dust.

c. Cut the knuckle portion into steaks or roasts. Be sure to trim the knucklebone and any excess fat before merchandising.

d. You can also merchandise the arm portion of the shoulder as roasts.

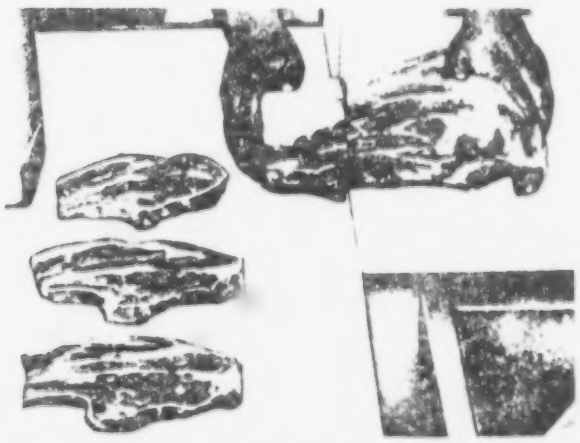


Figure 4-83. Cutting blade steaks and roasts.

Cutting blade steaks and roasts. This is shown in figure 4-83 and involves the following:

a. Remove any excess chine bone from the remaining portion of the shoulder.

b. Cut steaks or roasts perpendicular to the back up to the deposit of fat and gland in the neck.

c. Trim any excess fat and remove any bone dust from the steaks or roasts.

d. The shoulder also can be boned and processed into boneless roast.

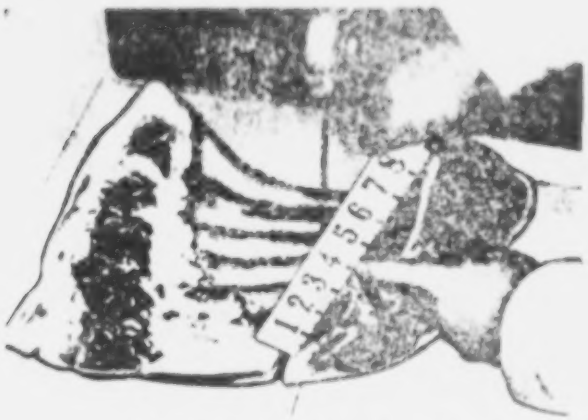


Figure 4-84. Separating breast from ribs.

Separating breast from ribs and processing breast. This process involves the following:

a. Mark 4 inches from the chine bone on the small end, cut parallel to the back, and separate the breast from the ribs, as shown in figure 4-84.

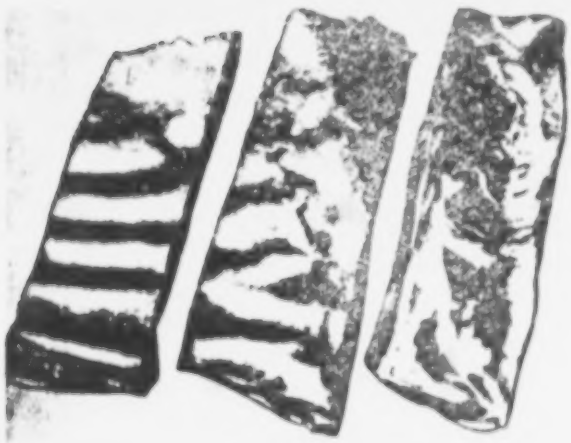


Figure 4-85. Cutting breast into three pieces of uniform size.

b. Cut the breast into three pieces of uniform size, as shown in figure 4-85.

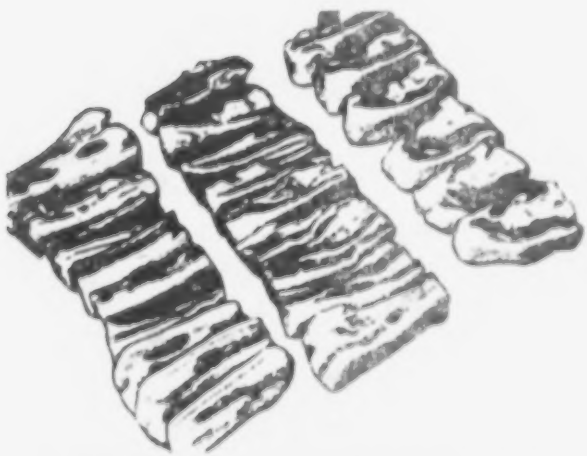
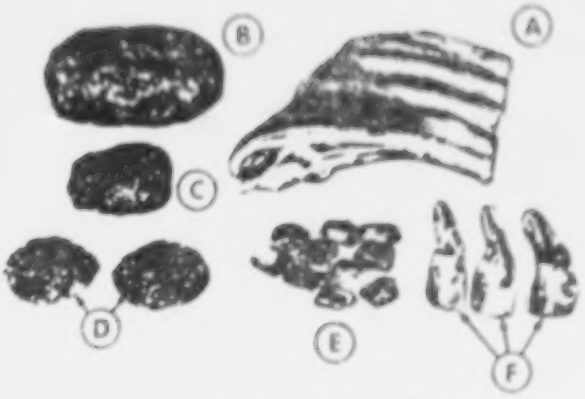


Figure 4-86. Slicing into uniform strips for stewing or braising.

c. Slice the three pieces into uniform strips for stewing or braising, as shown in figure 4-86.



A. Breast whole for stuffing (cut pocket in breast before merchandising)
B. Ground veal for meatloaf
C. Ground veal
D. Patties
E. Stew, boneless
F. Stew, bone-in (cut approximately 1 inch thick)

Figure 4-87. Merchandising breast.

d. Refer to figure 4-87 for procedures in merchandising the breast.

Figure 4-88. Removing chine bone from ribs.

Processing rib chops. Remove the chine bone from ribs, as shown in figure 4-88. See figure 4-89 for processed rib chops with excess fat and bone dust removed.

Exercises (027):

1. Match each processing step in column B with its related cutting procedure in column A. Each item in column B may be used only once.

Column A	*Column B*
Tasks	*Processing Steps*
____ (1) Cut behind 13th rib.	a. Separating rib and navel from shoulder and breast.
____ (2) Cut between sixth and seventh ribs.	b. Cutting armbone steaks and roasts.
____ (3) Separate where the armbone joins foreshank.	c. Removing foreshank and breast from shoulder.
____ (4) Cut down to large knuckle bone.	d. Separating hindquarter from forequarter.
____ (5) Mark 4 inches from chine bone.	e. Separating breast from ribs.

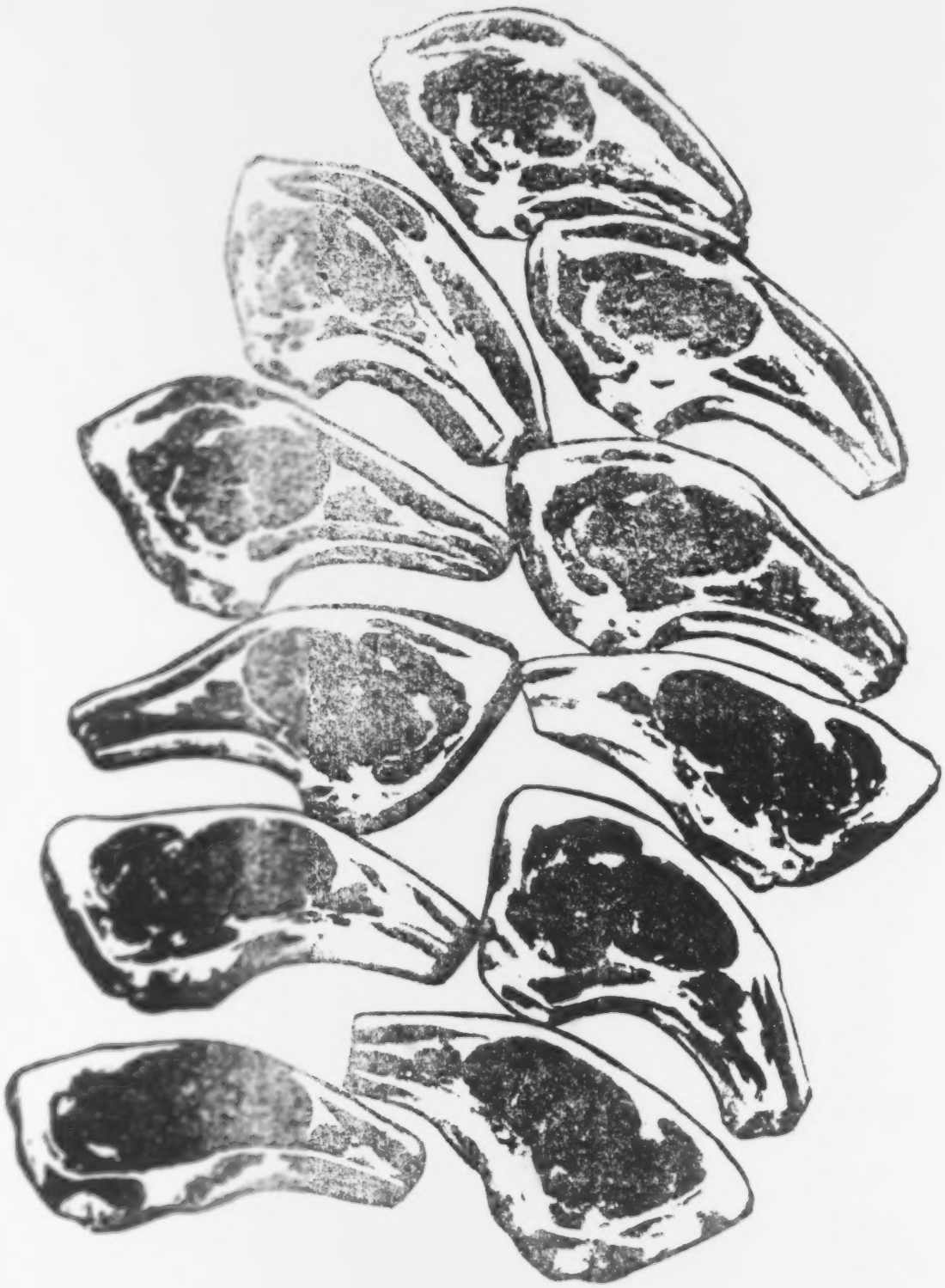


Figure 1.40 Processing rib chops

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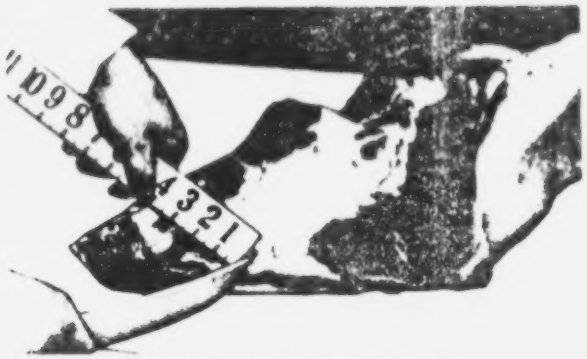

Figure 4–90. Marking for removing flank.

028. Specify appropriate cutting procedures to accomplish steps in veal hindquarter processing.

Hindquarter Processing. As you process the veal hindquarter, follow figures 4-90 through 4-97.

Removing flank. Figures 4-90 and 4-91 show you how to do this:

a. Lay the hindquarter on the preparation table, with the skin side down.

b. Mark 4 inches from the chine bone on the loin end.

c. Cut through the cod fat to the natural seam.

d. Follow the contour of the round (knuckle side) to the lower flank.

e. Cut in a straight line to the 4-inch mark to remove.

f. Remove any membrane from the inside of the flank and merchandise this as stew or ground.

Figure 4–91. Removing flank.

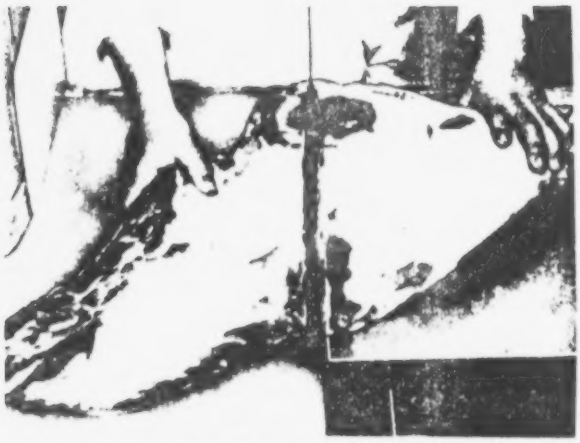

Figure 4–92. Separating rump and loin from leg.

Separating rump and loin from leg. This is shown in figure 4-92. To do this, mark 1 inch from the aitch (rump) bone, cut parallel to the aitchbone, and separate them.

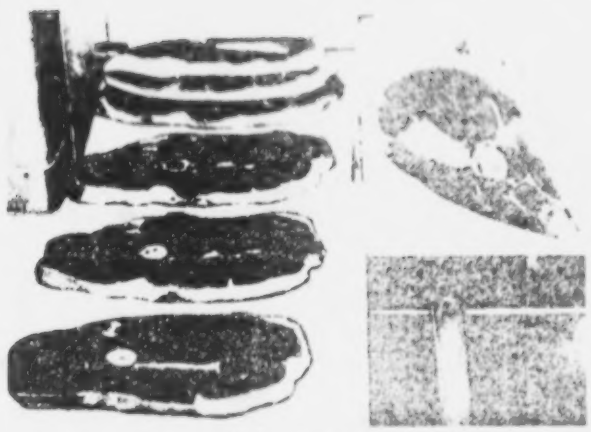

Figure 4–93. Processing veal cutlets.

Processing veal cutlets. This is shown in figure 4-93. To process veal cutlets, proceed as follows:

a. Slice cutlets of desired thickness until the heavy deposit of fat in the center of the leg is reached.

b. Trim any excess fat and dark or dry areas and remove all bone dust.

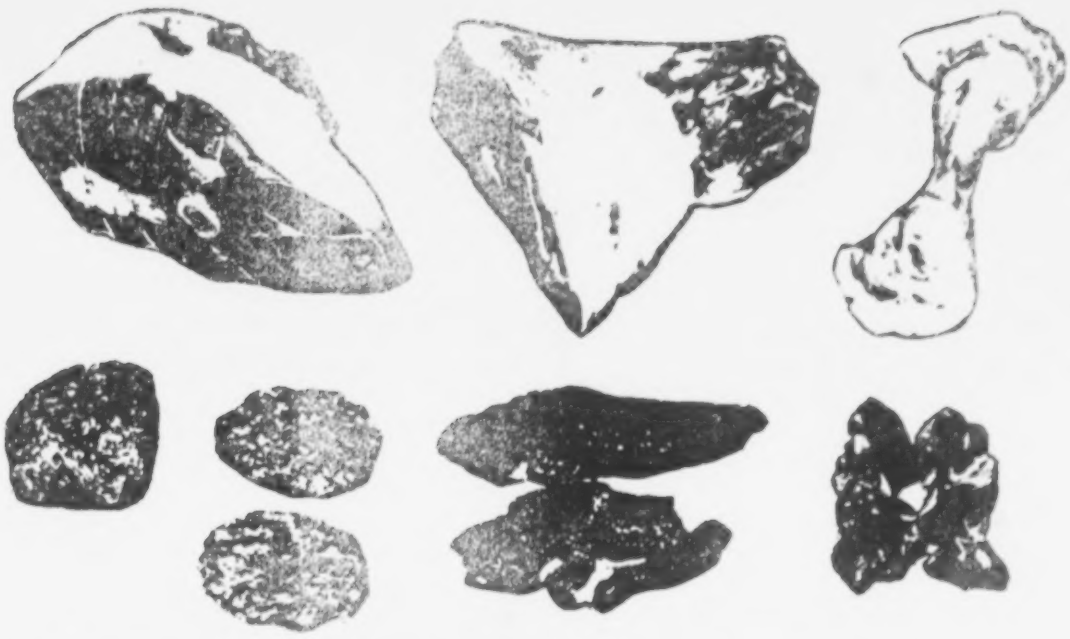

Figure 4–94. Processing back portion of leg.

Processing back portion of leg. This is shown in figure 4-94. To process the back portion of leg (center top of fig. 4-94) proceed as follows:

a. Remove the shankbone (top right, fig. 4-94) at the stifle joint.

b. Saw off the large portion of the leg bone at the stifle joint.

c. Fold the heel meat into the area where the portion of the leg bone was removed.

d. Tie this up with roast cord.

e. Merchandise this as a semiboneless roast.

At the top left of figure 4-94 you can see the leg roast, semiboneless, and tied. In the bottom left of this figure, you can see ground veal and veal patties (bottom, second from left, fig. 4-94). The back portion of the leg may also be processed and merchandised as cubed steaks (bottom, second from right, fig. 4-94) or boneless veal stew (bottom right, fig. 4-94).

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Figure 4-95. Separating loin, sirloin, and rump.

Separating loin, sirloin, and rump. This is shown in figure 4-95. Separate as follows:

a. Remove the loin from the sirloin at the hipbone.

b. Separate the sirloin by cutting 1 inch from the ball end of the aitchbone and parallel with the loin end.

c. Merchandise the rump as bone-in or boneless roast.

Figure 4-96. Processing loin chops.

Processing loin. This is shown in figure 4-96. To do this, remove the chine bone, process the loin into chops or roasts, trim any excess fat, and remove all bone dust.

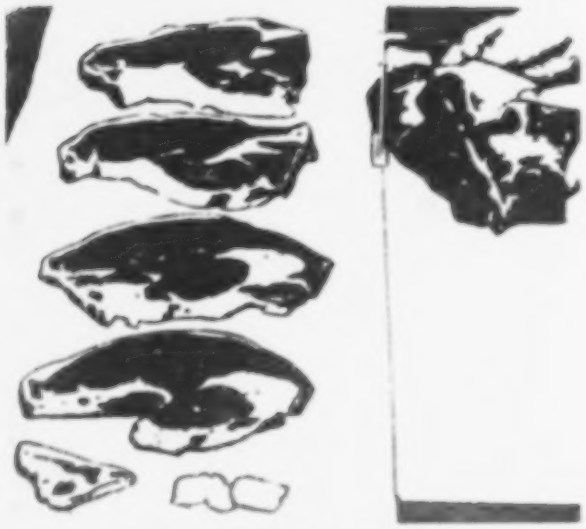
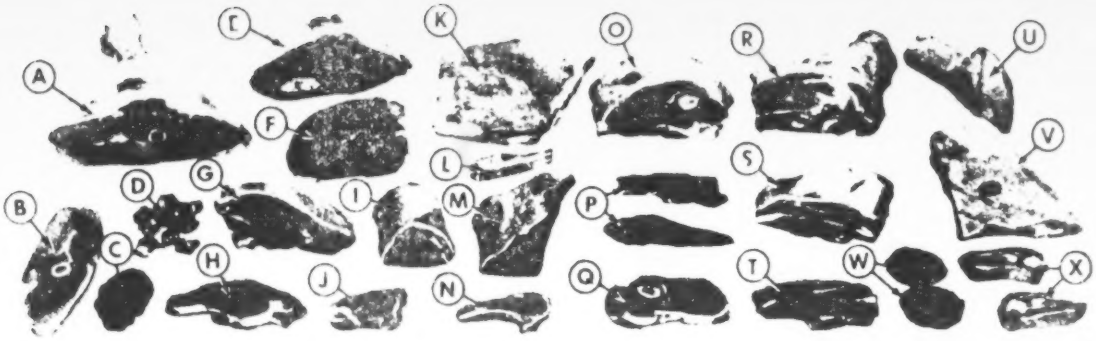


Figure 4-97. Processing sirloin chops.

Processing sirloin. This is shown in figure 4-97. Cut chops or roasts into desired thickness, and remove any excess bones from the chops (bottom left, fig. 4-96). Trim any excess fat and remove all bone dust.



A. Leg of veal
B. Veal cutlets (round steak)
C. Veal kidney
D. Stew, boneless
E. Leg roast, semiboneless
F. Rump roast
G. Sirloin roast
H. Sirloin chop
I. Loin of veal
J. Loin chop
K. Breast (navel) for stuffing
L. Breast (navel) for stew
M. Rib of veal
N. Rib chop
O. Armbone roast
P. Veal cubed steak
Q. Armbone chop
R. Blade and neck portion of shoulder
S. Blade roast
T. Blade chop
U. Shank, whole
V. Breast (brisket) for stuffing
W. Veal patties
X. Breast (brisket) for stew

Figure 4-98. Cuts processed from a side of veal.

Cuts Processed From Veal Carcass. Notice the cuts processed from a veal carcass shown in figure 4-98.

Exercises (028):

1. Match each veal hindquarter processing step in column B with its related cutting procedure in column A. Each item in column B may be used only once.

Column A	*Column B*
Tasks	*Processing Steps*
____ (1) Mark 4 from chine bone on loin end.	a. Separating loin, sirloin, and rump.
____ (2) Cut parallel to aitchbone.	b. Processing sirloin chops.
____ (3) Cut 1 inch from ball end of aitchbone.	c. Removing flank.
____ (4) Remove excess bones from chops or roasts.	d. Separating rump and loin from leg.

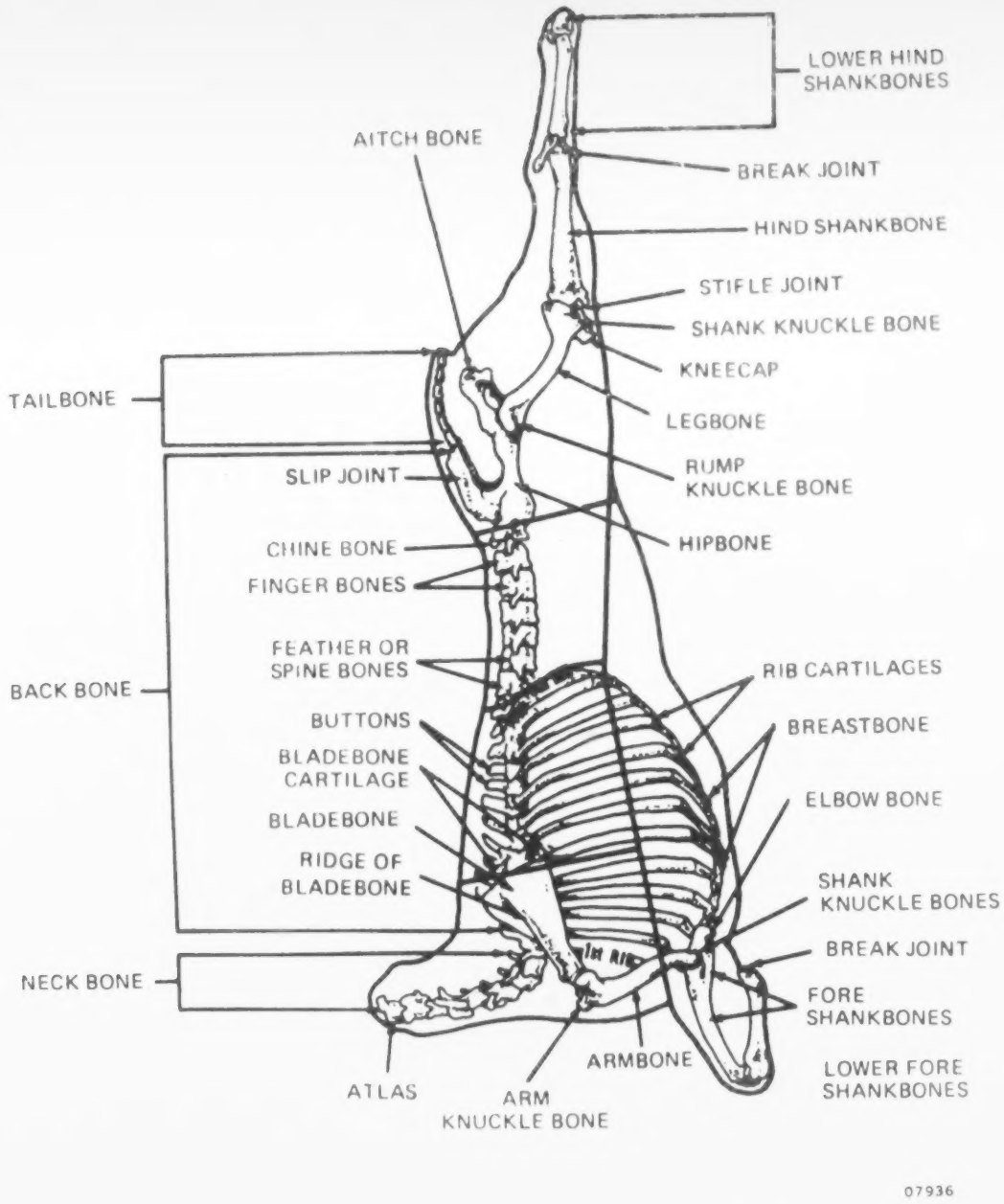


Figure 4–99. Skeletal chart of side of lamb.

4-6. Cutting Differences Between Lamb and Beef

As in beef and veal, there are particular cutting procedures that apply only to lamb. We will take these up here.

029. Identify cutting differences in processing lamb.

A lamb skeleton, shown in figure 4-99, is obviously very similar to a beef skeleton, but of course, it is much smaller. Another difference between the two is that, whereas a lamb hindshank contains break joints, beef does not.

Figure 4–100. Hindsaddle and foresaddle.

The terms "hindsaddle" and "foresaddle" are used to describe the two basic divisions of lamb carcasses, shown in figure 4-100. However, lamb carcasses are not split lengthwise into sides. Also, when you make saddles of lamb, you leave the two forequarters or hindquarters joined at the backbone. Finally, where lamb loin yields chops, beef loin yields steaks.

Exercises (029):

Identify each true statement about lamb and beef cutting differences and correct those that are false.

___ 1. the terms "hindsaddle" and "foresaddle" are used to describe the two basic divisions of lamb carcasses.
___ 2. Lamb carcasses are split into sides.
___ 3. Lamb loin yields lamb chops.

Figure 4–101. Separating hindsaddle from foresaddle.

4-7. Lamb Processing

In discussing the processing of lamb, we will proceed in the following order:

- Separating the foresaddle from the hindsaddle.
- Processing foresaddle.
- Processing hindsaddle.

030. Identify correct lamb processing procedures.

Separating Foresaddle From Hindsaddle. This is shown in figure 4-101. To perform this separation, first remove kidneys and trim any dark surfaces from the neck area. Then cut behind the 13th rib, leaving all of the ribs on the foresaddle.

Processing Foresaddle. As you study the processing of lamb foresaddle, refer to figures 4-102 through 4-112.

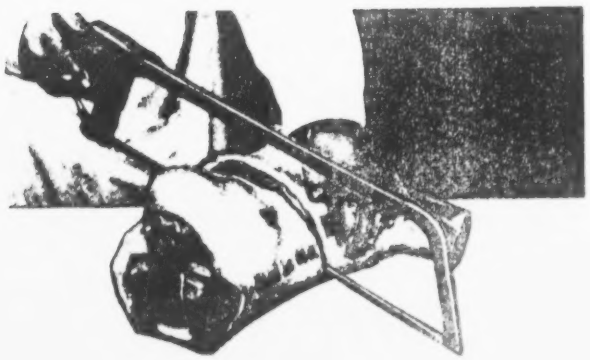


Figure 4–102. Separating ribs from shoulder.

Figure 4-102. Begin by separating the ribs from the shoulder between the sixth and the seventh ribs (counting from the neck end).

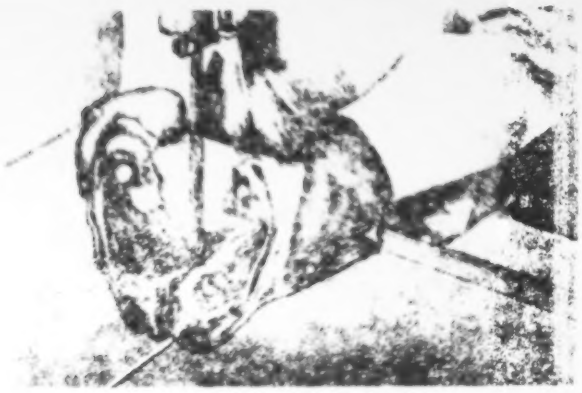


Figure 4–103. Processing rib section.

Figure 4-103. First, saw through the backbone of the rib (rack) section, leaving an equal amount of backbone on each side.

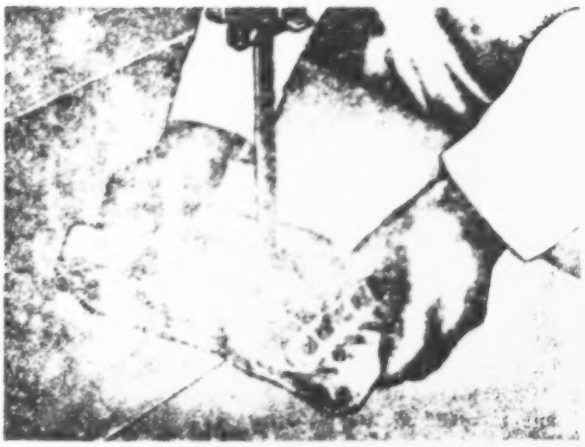


Figure 4–104. Removing breast from ribs.

Figure 4-104. Here, measure 4 inches from the chine bone and cut parallel to the back of the rib to remove the breast.

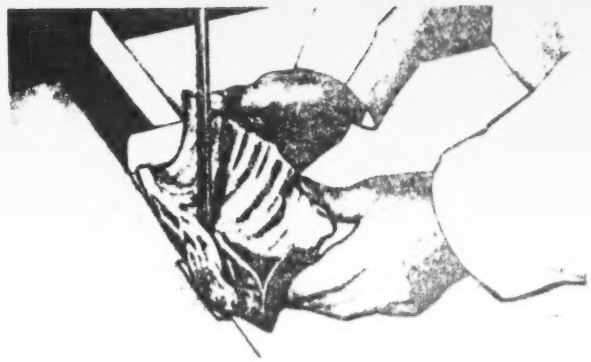


Figure 4–105. Removing chine bone.

Figure 4-105. Next, remove the chine bone from the rib.

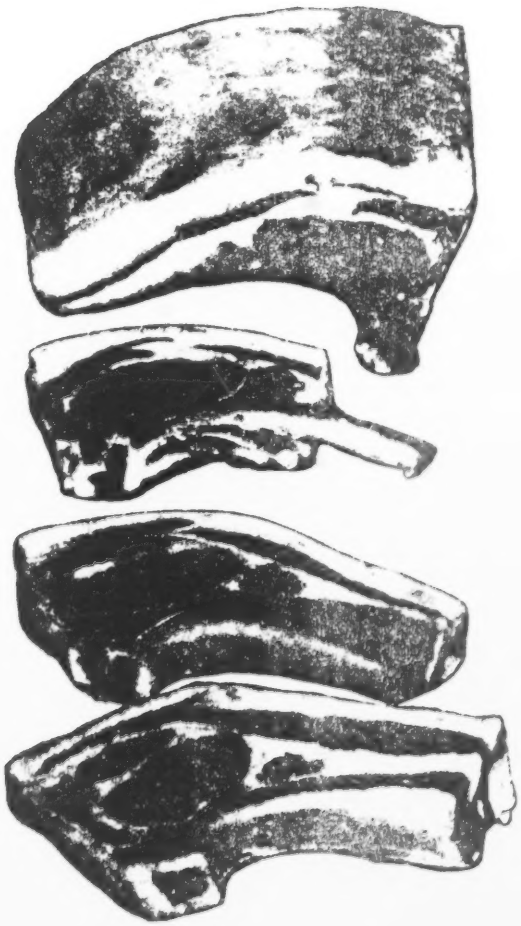


Figure 4–106. Merchandising the rib section.

Figure 4-106. Merchandise the rib (top of figure) in any of these ways:

a. As French lamb chops (second from top, fig. 4-106). To prepare, cut chops in between each rib and remove the meat and membrane approximately 1 inch from the end of the rib bone.

b. As rib chops (second from bottom and bottom, fig. 4-106). For this, cut chops into the desired thickness and remove excess fat and bone dust. Remove the lamb fell for better eye appeal. You can also process double rib chops from the rib section.

Figure 4-107. Removing neck.

Figure 4-107. Remove the neck, slice it into uniform cuts, and merchandise it as stew or boneless ground lamb.

Figure 4-108. Splitting shoulders.

Figure 4-108. Split shoulders through the center of backbone, leaving an equal amount of backbone on each shoulder.

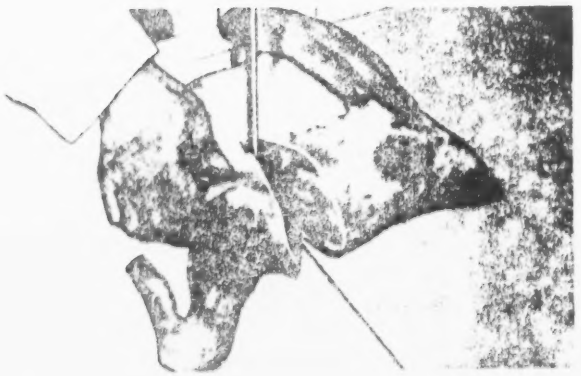


Figure 4-109. Removing shank and breast from shoulder.

Figure 4-109. Remove the shank and brisket from the shoulder; then proceed as follows:

a. Locate the joint where the armbone joins the fore shankbone.

b. Measure 1/2 inch from the joint on the shoulder side and mark.

c. Cut parallel to the back to remove these cuts.

Mock duck is prepared from the top portion of a lamb shoulder. To obtain this, separate the shoulder by removing the top from the rib-and-neck portion. Next, remove meat from around the joint end of the shank, just above the breakjoint, to make the bill and mouth. Remove any surplus fat. Now mold the meat into the desired shape and secure it with small wooden skewers. Sew it up with roast cord, then remove the skewers. Carve the wings on the side. Use half cranberries for eyes and a strip of beef for the tongue. Beef cartilage may be shaped into a fan and used for the tail.

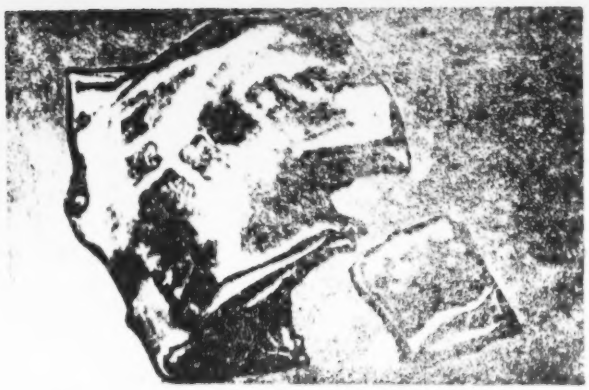


Figure 4–110. Removing two-rib corner from shoulder.

Figure 4-110. To remove the two-rib corner from the shoulder, proceed in this way:

a. Locate the blade bone cartilage, measure 1/2 inch on the shoulder side, and mark.

b. Cut from this mark through the first two ribs, parallel with the back.

c. Cut parallel to and between the rib bones to remove.

d. Process the two-rib corner into stew.

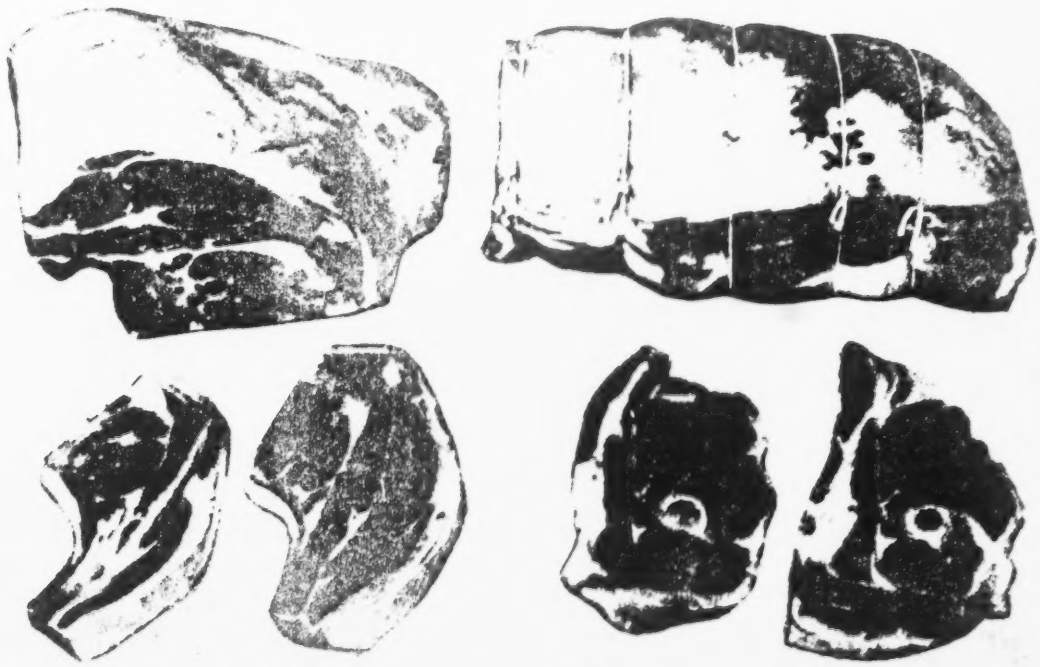


Figure 4–111. Processing and merchandising lamb shoulder.

Figure 4-111. Process the lamb shoulder into these cuts:

a. As shoulder roast, bone-in (top left, fig. 4-111). Cut two or three chops from each side of the shoulder and merchandise the remainder of the shoulder for roast.

b. As blade chops (left and second from left, bottom, fig. 4-111). Trim any fat and remove all bone dust from the chops. Blade chops are identified by the bladebone and the color and texture of the meat.

c. As armbone chops (right and second from right, bottom, fig. 4-111). Trim any excess fat and remove all bone dust from the chops. Armbone chops are identified by the round armbone and the color and texture of the meat.

d. As shoulder roast, boneless (top right, fig. 4-111). Remove the shoulder from the rib, back, and neckbones by following the contour of bones. Open the shoulder from the sides only, cutting meat from the bladebones and the armbones. Roll and tie this up with roast cord. Merchandise boneless roasts in various weights.

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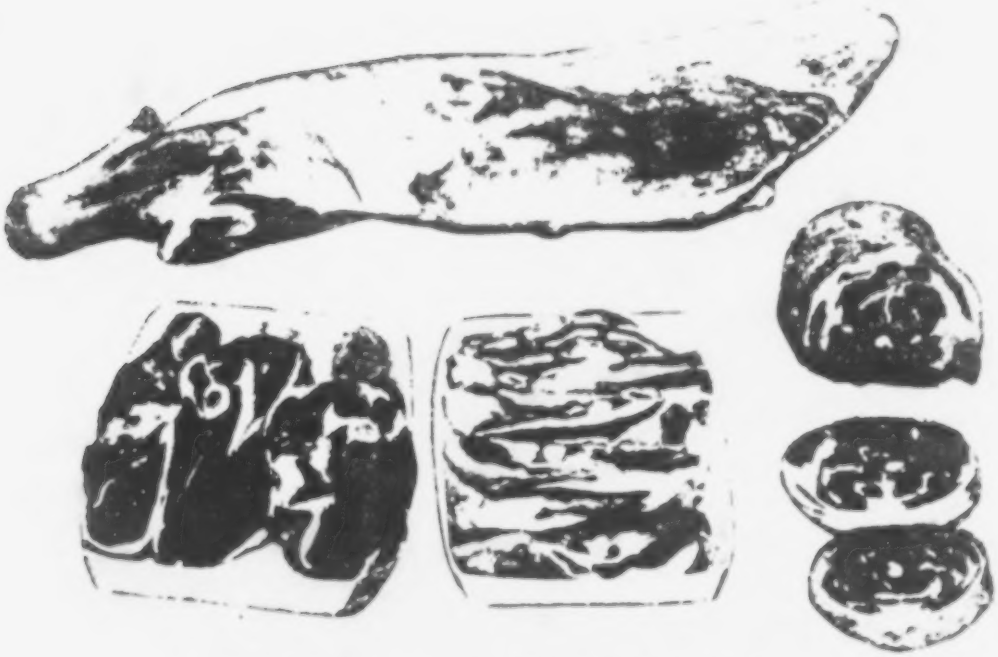


Figure 4–112. Merchandising foreshank, breast, navel, and neck.

Figure 4-112. To process and merchandise the foreshank, breast, navel, and neck (top, fig. 4-112) proceed in this way:

a. Foreshank. For this you must do as follows: Remove the lower portion of the shankbone. Merchandise the whole for individual forelegs (bottom left, fig. 4-112), or cut into smaller pieces for stew, or boned for stew or ground.

b. Breast and naval. You cut these into ribbets by cutting parallel with the rib bone and across the breastbone (center bottom, fig. 4-112), or bone or grind the breast and navel.

c. Neck. Slice the neck into uniform cuts for stew (extreme right, fig. 4-112) or bone the neck for stew or ground.

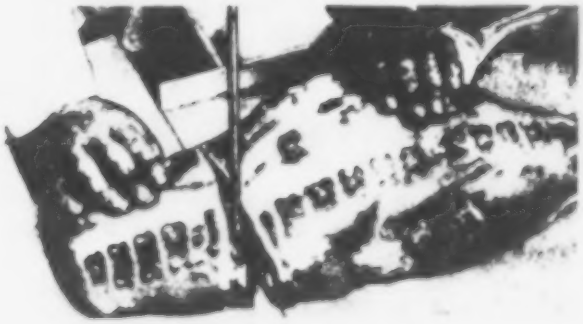


Figure 4–113. Separating loin from leg.

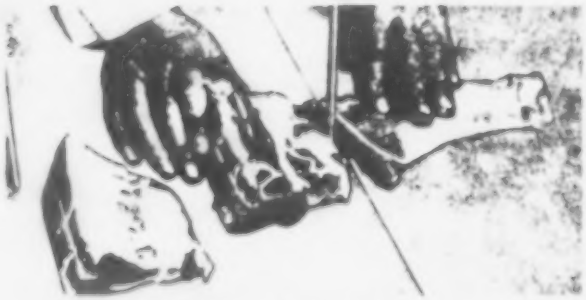


Figure 4–114. Processing loin.

Processing Hindsaddle. To process the hindsaddle, follow figures 4-113 through 4-121.

Figure 4-113. Separate the loin and leg; then locate the hipbone. Cut immediately in front of the hipbone on the loin end.

Figure 4-114. To process the loin, Split the loin, leaving an equal amount of backbone on each side. Then measure 4 inches from the chine bone and remove any excess flank by cutting parallel with the backbone.

Figure 4-115. Merchandising loin.

Figure 4-115. The loin may be merchandised as roast (top of this figure) or loin chops (bottom 3 of this figure). You can identify loin chops by the T-bone and the color, texture, and size of muscle. Trim any excess fat, remove all bone dust from chops, and merchandise them by varying the number of chops per package.

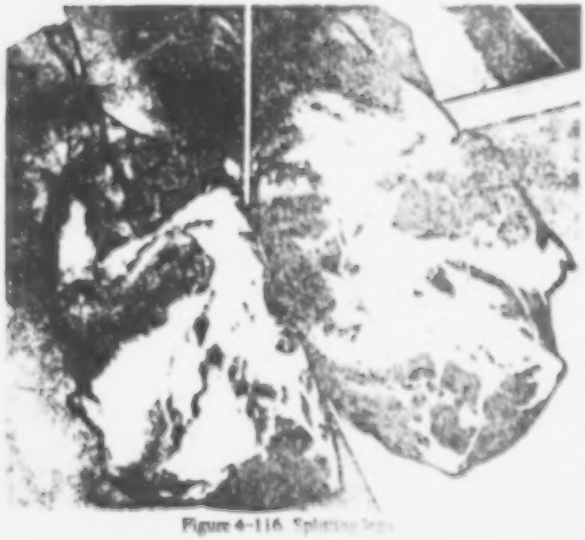


Figure 4-116. Splitting legs.

Processing Legs. To process these split the legs through the center of the backbone, as shown in figure 4-116. Trim the tailbone from the legs, as shown in figure 4-117. Remove the excess fat and flank from the legs, as shown in figure 4-118. Saw off the lower shankbone, approximately 1 inch above the break joint, as shown in figure 4-119.

Figure 4-117. Trimming tailbone

Figure 4-118. Removing excess fat and flank from legs

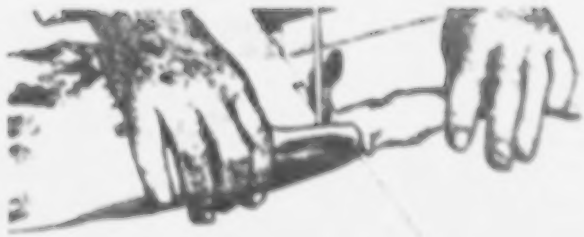


Figure 4-119. Removing lower shankbone

Figure 4-120. Merchandising leg of lamb, whole.

Figure 4-120. Merchandise the whole leg of lamb in these ways:

a. As American leg (left, fig. 4-120). To do this, remove the shankbone at the stifle joint, leaving the shank meat attached to the leg. Fold the shank meat into the natural seam that is exposed when separating the shankbone and secure the meat into place. Saw through the backbone every 1/2 inch to make carving easier. Remove any excess fat.

b. As French leg (right, fig. 4-120). To do this, remove the meat from the shankbone approximately 2 inches above the break joint and scrape the bone free of meat. Saw through the backbone every half inch for easier carving. Remove the excess fat.

Figure 4-121. Merchandising leg of lamb, halves.

Figure 4-121. You can halve the leg may be halved into the following:

a. Leg half (left, fig. 4-121). For this, cut the leg in half by cutting parallel to the aitchbone. It is usually priced higher than sirloin half.

b. Sirloin half (right, fig. 4-121). You can remove chops to reduce the size of the leg. Cut the leg into chops or bone, roll, and tie for roast.

A. Saddle (two legs joined together)
B. American leg
C. Leg chops
D. Boneless shank meat
E. Leg with sirloin chops removed
F. Sirloin chops
G. French leg
H. Loin, untrimmed
I. Loin, trimmed
J. Double kidney loin chops
K. Kidneys
L. Double loin chop
M. Loin chop
N. Rib (rack)
O. Riblets
P. Breast
Q. Double rib chops
R. Rib chops
S. Crown roast
T. Triangle
U. Mock duck
V. Boneless shoulder roast
W. Armbone chops
X. Blade chops
Y. Foreshank
Z. Neck and neck slices

Figure 4-122. Cuts processed from carcass of lamb.

Cuts Processed From Lamb Carcass. For the retail cuts processed from a lamb carcass study figure 4-122.

Exercises (030):

Identify each true statement about lamb processing procedures and correct those that are false.

___ 1. Separate the foresaddle from the hindsaddle behind the 13th rib, leaving all ribs on the hindsaddle.

___ 2. Separate the shank from the shoulder between the sixth and seventh ribs.

___ 3. French lamb chops are processed from the loin.

___ 4. The shoulder must be split at the backbone before processing.

___ 5. Mock duck is prepared from the top portion of a shoulder.

___ 6. Before cutting retail cuts from the shoulder, remove the three-rib corner.

___ 7. Remove the backstrap from the shoulder for boneless roast.

___ 8. To separate loin from the leg, cut immediately behind the hipbone.

___ 9. Lamb legs may be merchandised whole, half, or as sirloin cut into chops.

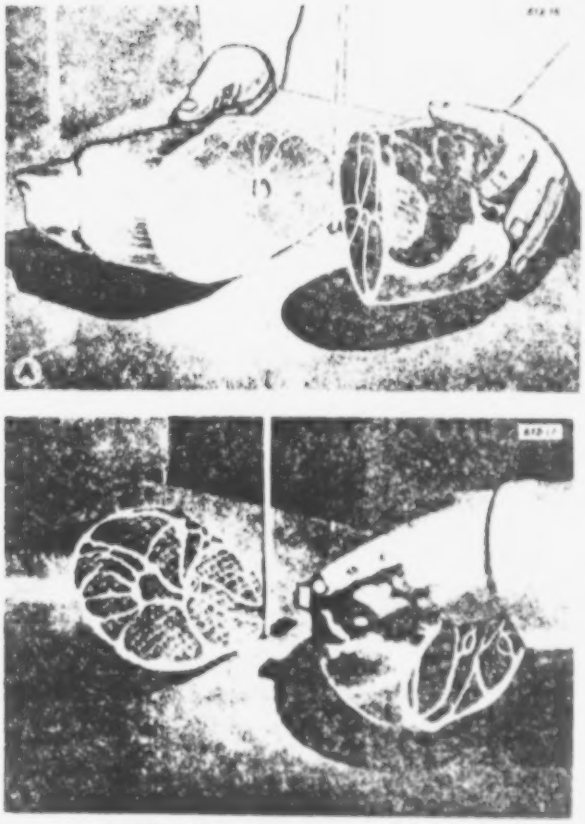


Figure 4-123. Processing ham into halves.

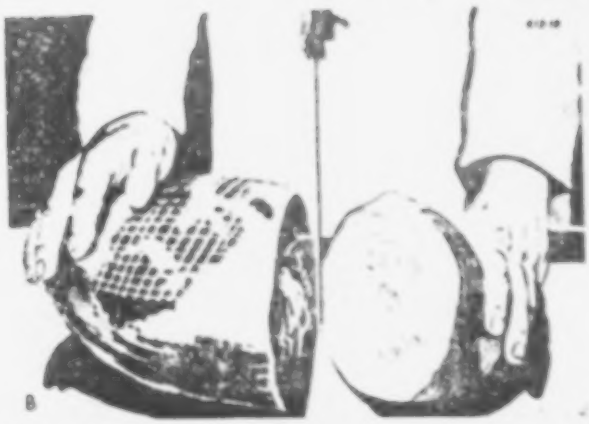
4-8. Pork Processing

The wholesale pork items received in the commissaries to be processed are hams, loins, bacon, and salt pork. We will discuss the processing procedures for each of these, beginning with hams.

031. Given various steps in the processing of hams, specify the weight range of ham for each step.

We will divide our discussion of hams into (a) hams 12 pounds and under, and (b) hams over 12 pounds.

Hams 12 Pounds and Under. Hams weighing 12 pounds and under are sold either as half or whole hams. Split hams in half, cutting parallel with the aitchbone (fig. 4-123, picture A). Remove the bone tip on the end of the butt portion for better wrapping (fig. 4-123, picture B).



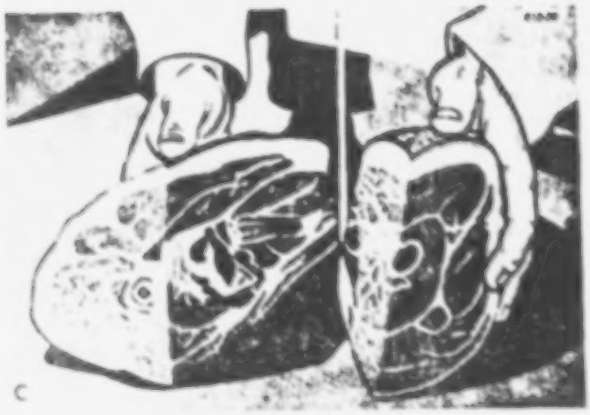


Figure 4-124. Preliminary ham cuts.

Figure 4-125. Further ham cuts.

Hams Over 12 Pounds. Process larger hams into individual cuts. To do this, look at figure 4-124 as we proceed. First, pierce the area of the knucklebone with the knife to locate the edge nearest the center of the ham to remove the shank portion (picture A, fig. 4-124). Remove shank portion at this mark by cutting parallel to the bone (picture B, fig. 4-124). Remove the heel portion from the bone side of the shank (picture C, fig. 4-124). Now refer to figure 4-125. Here, slice the heel portion into breakfast slices, trim off any excess fat, and cut the remainder of hock into seasoning pieces (picture A, fig. 4-125). Cut center slices down to the aitchbone of the butt portion (picture B, fig. 4-125). Center ham slices are the most choice ham cut. Next, place the remaining butt portion face down and remove the aitchbone portion (picture C, fig. 4-125). Cut the aitchbone portion into small seasoning pieces. Cut the cushion portion into breakfast slices (fig. 4-126). For final preparation, trim off any excess fat.

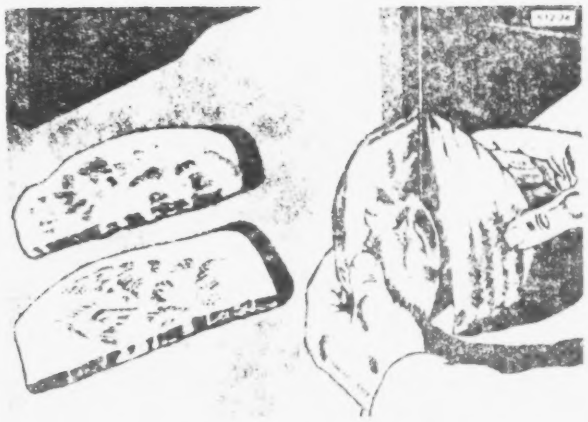


Figure 4–126. Slicing breakfast slices.

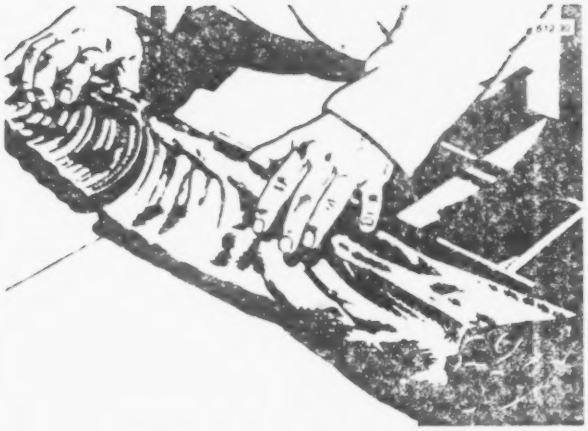


Figure 4–128. Removing rib section.

Exercises (031):

For exercises 1 through 5, specify the correct size range of ham to which each of the processing steps cited pertains.

1. Sell whole.

2. Remove heel portion.

3. Cut cushion into breakfast slices.

4. Merchandise as half hams.

5. Remove the bone tip on the butt portion for better wrapping.

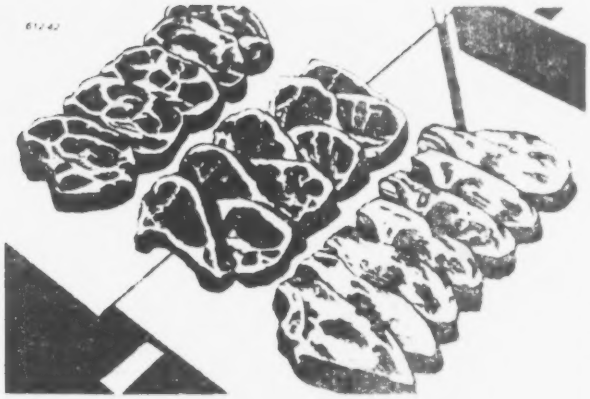


Figure 4–127. Pork chops properly prepared.

032. Specify steps in pork loin processing.

Pork Loin Processing. Loins may be processed and merchandised in a variety of ways, depending upon customer preference. For example, the entire loin may be processed into chops and merchandised as end cut, center cut, and rib chops. In addition, the loin may be processed to produce roasts and country-style ribs along with center-cut chops, or the loin may be boned and merchandised as boneless loin roast and spareribs. First, we will discuss processing the full loin into chops.

Center, end, and rib chops. The size of the pork loin and customer preference governs the thickness of the chops. Loins weighing 8 to 12 pounds are cut into chops 1/2 inch thick, and chops from loins in the 12- to 16-pound-weight range are processed 3/8 inch thick. Pork chops for stuffing shows cut 1 to 2½ inches thick. Figure 4-127 are the properly processed chops. On the left are end-cut; center—center cut; and on the right, rib chops. Center-cut chops are the most desirable of the three. Package chops to provide a variety for customers (two or more chops per package).

Roasts and country-style ribs. Remove the rib section seven ribs from the rib end of the loin, as shown in figure 4-128. To merchandise the rib section as bone-in roast, make a cut approximately halfway down, across, and through the rib bones for easier carving. To prepare boneless rib roast, remove the bladebones and upper layers of fat from two rib ends. Place the two boneless pieces

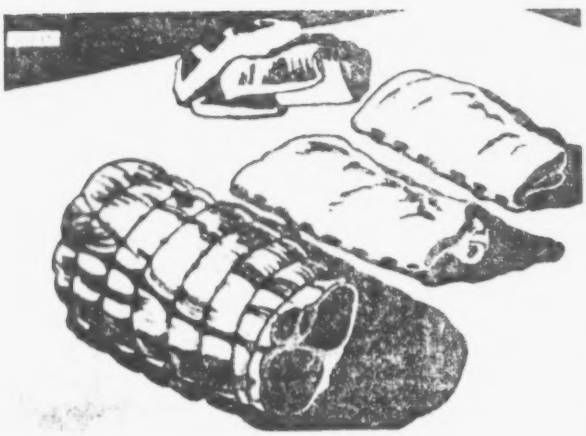


Figure 4–129. Boneless rib roast.

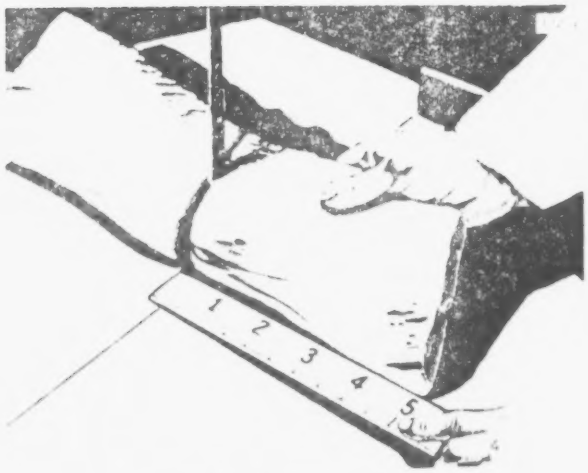


Figure 4–130. Removing loin end.

Figure 4–131. Sawing chine bone.

together, fat side out, and tie them. The finished boneless rib roast is shown in figure 4-129. Merchandise the rib bones as backribs.

Remove the loin end 5 inches from the tip of the loin end, as shown in figure 4-130. Saw through the chine and hip bone for easier carving, but do not remove them (see fig. 4-131.) Merchandise the loin end as sirloin roast.

Country-style ribs are prepared by cutting through the length of the rib end diagonally, removing the bladebone. Score between the ribs. To see these ribs, look at figure 4-132.

Cut the remaining center-center portion of the loin into chops, bone-in roast, or boneless roast. Prepare roasts by using the same method in preparing rib roast.

Boneless roast and backribs. From this final method of processing loins, you will receive boneless roasts and backribs. Remove the tenderloin from the inside of the loin. Then remove the meat from the bones by following the contour of bones, as seen in figure 4-133. Cut the boneless loin in half to produce two pieces of equal length. Place one piece of boneless pork loin on the preparation table, fat side down, and place the pork tenderloin on the boneless loin lengthwise. Place the second half of the loin on top, fat side up and tie approximately 1 inch apart. Merchandise this loin whole or cut into roasts of various sizes.

Figure 4–132. Country-style ribs.

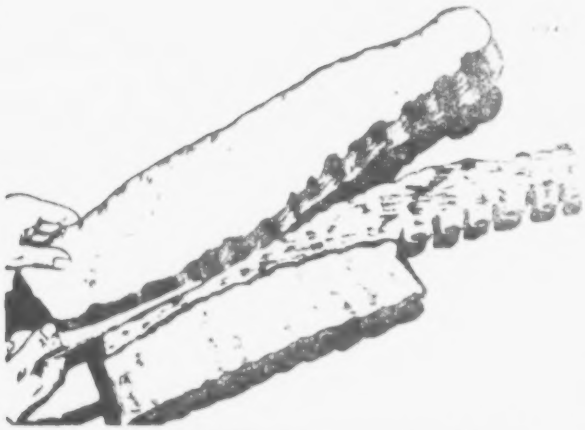


Figure 4–133. Separating ribs and backbone from loin strip.

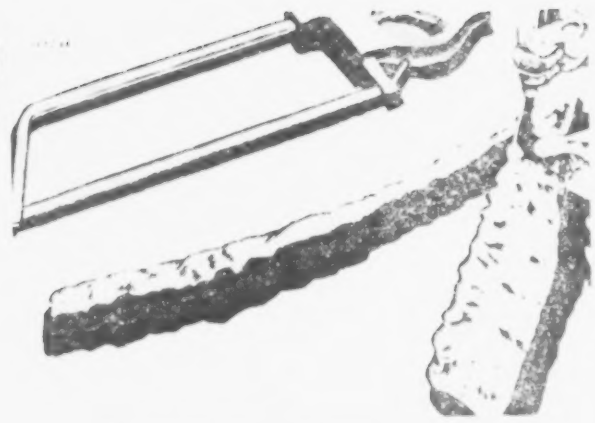


Figure 4-134. Separating rib bones from backbone.

To obtain backribs, separate the rib bones from the backbone, as shown in figure 4-134. Merchandise the backribs whole or cut through the ribs at two or three rib intervals for individual servings—this as shown in figure 4-135.

Exercises (032):

1. Cut pork loins weighing 8 to 12 pounds into chops _____ inch(es) thick.
2. Cut pork loins weighing _____ to _____ pounds each into chops 3/8 inch thick.
3. Separate the rib section from the pork loin _____ ribs from rib end of the pork loin.
4. Remove the _____ _____ 5 inches from the end of the loin.
5. When processing bone-in rib roast, a cut is made across and through the rib bones to make _____ _____ .

033. State the procedures for processing slab bacon and salt pork; differentiate between statements pertaining to salt pork.

Slab Bacon. Bacon may be received in the commissary meat department sliced and prepackaged or in slab form. Slab bacon may be cut into 1- or 2- pound pieces for display or sliced and displayed in one-pound packages.

Salt Pork. Salt pork is obtained from the belly section of a hog. Salt may be received prepackaged or in bulk. Bulk salt pork is also processed in pieces or sliced for display. Processed packages of salt pork should not weigh more than 1 pound.

Exercises (033):

1. State the processing procedures for slab bacon and salt pork.
2. Identify each true statement about salt port and correct those that are false.

____ a. Salt pork is obtained from the sides and belly section of a hog.

____ b. When it is received, salt pork is either prepackaged or in bulk form.

____ c. Once processed, packages of salt pork should not weigh more than 1 pound.

4-9. Barbecuing Meat and Poultry

We are concerned with one last function in the preparation of meats. This function is known as "barbecuing meat and poultry." In sequence we will discuss the following:

We are concerned with one last function in the preparation of meats. This function is known as "barbecuing meat and poultry." In sequence we will discuss the following:

- Equipment required.
- Accountability.
- Code dates.
- Weight range of chickens.
- Cooking and holding temperatures.
- Displaying.

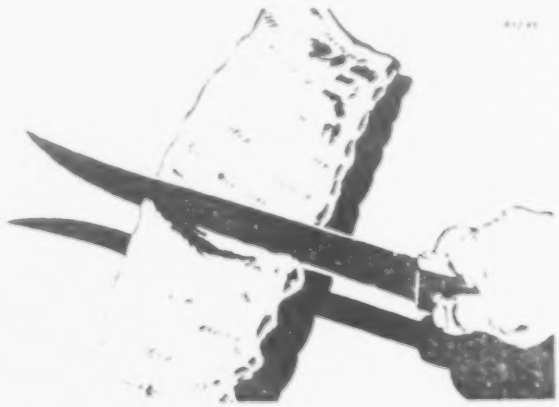


Figure 4-135. Cutting rib section into individual servings.

034. Differentiate between statements concerning barbecuing meat and poultry.

Equipment Required. The necessary miscellaneous accessories for the barbecuing and displaying of items are purchased as commissary operating supplies. These include such items as plastic or foil lined bags, wrap dispensers, pliofilm, basting or cleaning brushes, heat thermometers, sauces, seasoning, cleaners, aerosol silicone, food release, aluminum foil pans, and teflon mitts.

Accountability. Barbecue items are the responsibility of the meat department manager and are accounted for as regular meat items. Therefore, care must be used to assure that raw product costs are fully recovered. Each barbecue item sold stands on its own merit, and losses are not absorbed by other items in the meat department.

Keeping Time of Chickens. Barbecued chickens have a shelf life of only 2 days. On the second day, they are sold chilled, and after the second day, they are discarded.

Code Dates. All barbecued items are dated or coded to insure freshness. Use different colored ties to identify items packaged each day.

Weight Range of Chickens. Use only chickens within the 2- to 3-pound-weight range, and make certain they are thoroughly cooked.

Cooking and Holding Temperatures. To insure that chickens are cooked thoroughly, a minimum internal temperature of 165° F. must be reached. In barbecuing pork, the minimum internal temperature must be 170°. The holding warmer must maintain an internal temperature for barbecued items of at least 150° F.

Displaying. To preclude unsanitary conditions and enhance eye appeal, display barbecued items in see-through bake-and-serve bags.

Exercises (034):

Identify each true statement and correct those that are false.

___ 1. Salt and pepper may be purchased as operational supplies for barbecuing items.

___ 2. Losses of barbecued items sold may be absorbed by raising the prices of other meat items.

___ 3. Barbecued items are discarded after the third day.

___ 4. Use different colored ties to identify items packaged each day.

___ 5. Chickens used for barbecuing should weigh between 2 to 4 pounds each.

___ 6. The internal temperature for cooking pork is a minimum of 170° F.

4-10. Salvaging Bones, Fat, and Trimmings

Throughout this chapter, we have referred to boning and trimming. In this section, we will again talk about these tasks and also about bones and fat disposition.

035. Differentiate between statements concerning procedures to follow in salvaging bones, fat, and trimmings.

Beef Trimmings. Trim all meat from bones before discarding. Meat left on bones results in higher prices for customers. Discard any dark exposed trimmings. Under no circumstances should ground beef be used as a salvage outlet for dark trimmings. Be careful of fat in ground meats. Too much fat in ground meat is not attractive and will result in customer complaints and also a loss to the customer.

Disposition of Bones and Fat. Much of a beef carcass consists of bones and fat. Some bone will be left on retail cuts of meat. We have, however, bones, fat, and dark outside trimmings which are not usable. Accordingly, the meat department must dispose of these items. If possible, your local defense property disposal office will obtain a contract for the sale of bones and fat. They are stored in containers, under refrigeration, until picked up by the contractor. To preclude undesirable odors and spread of germs, the containers must be washed and sanitized frequently. For the same reasons, the contractor must make pickups frequently. List turned over to the contractor on AF Form 129 (prepared in triplicate). The contractor or his or her representative signs the forms and retains the third copy. Forward the original and duplicate to the voucher and control clerk, who will post quantities on a monthly basis. On each operating-gain-and-loss test, the abstract is subtotaled. The quantities turned over to the contractor are priced, extended, and 90 percent of the value is entered on the inventory as a sale from the meat department.

If a contract for bones and fat is not possible, these items are disposed of by sanitary-fill personnel.

Exercises (035):

Identify each true statement and correct those that are false.

___ 1. Use all trimmings for ground meat or stew.

___ 2. Sanitize containers used for bones and fat frequently.

___ 3. If possible, a contract is made for the sale of bones and fat.

___ 4. AF Form 129 is prepared in duplicate for all bones and fat sold.

___ 5. All of the value of the items released to the contractor is credited to the meat department.

CHAPTER 5

Wrapping and Pricing Retail Meat Cuts

YOU HAVE LEARNED the methods, principles, and procedures for processing beef, veal, lamb, and pork. Now you are at the payoff point. Customers like to see meat in neat, clean, and sanitary packages. You must learn proper packaging and display procedures. This is the key and final reason for meat processing. Be as careful in packing and pricing meat items as you are in cutting and preparing them.

You must learn about the packaging equipment and about the supplies you need— wrapping film, packaging trays, wrapping machines and stations, scales, and scaling devices. In this chapter, you will find all of the information you need to produce attractive packages.

5-1. Packaging Supplies

The supplies required are clear or styrofilm meat trays and PVC films, rolls only.

036. State the proper procedures for storing wrapping film; specify the appropriate size trays and wrapping film needed to tray and wrap selected retail cuts of meat.

Wrapping Film. Figure 5-1 lists the roll size and machine setting for each size tray to be used with automatic wrapping machines. Film is a perishable product which requires special storage and handling.

Storage. The following guidelines apply to storage of film:

a. Store film in original containers until ready to use.
b. Do not stack roll stock tubes on end.
c. Do not stack roll stock cartons over 50 inches high.

Conditions for storing film. Ideal conditions for storing film are as follows:

a. Store film in a dry place not subject to extreme temperature, humidity, and direct sunlight.

b. Relative humidity for storing bulk stock should be from 35 to 50 percent and for packages from 50 to 65 percent.

c. Temperatures for storing all types of film should be 65° F to 75° F.

Film type. Film should bean uncoated-elastic type. The elasticity minimizes the amount of rewraps. Seal the film at the lowest possible temperature.

Meat Packaging Trays. Figure 5-2 lists the appropriate size trays to use with various meat cuts. For instance, tray model 2-S, which is 8 inches long, 5½ inches deep, is used for porterhouse, rib steak, T-bone steak, etc.

Exercises (036):

1. What precautions must you take when you stack film?

2. What should the relative humidity be for storing bulk stocks of film?

3. What is the proper temperature range for storing all kinds of film?

4. Using figures 5-1 and 5-2 as necessary, specify the appropriate size tray and film needed to tray and wrap each of the meat cuts listed below.

   a. Top round steak _____ _____
   b. Chuck roast _____ _____
   c. Rib steak _____ _____
   d. Tripe _____ _____
   e. Chop Suey _____ _____

5-2. Wrapping, Pricing, and Displaying

In this section, we will discuss the wrapping, pricing, and scaling systems used in meat departments. We will also discuss proper display and rotation methods that enhance sales of retail meat cuts.

037. Identify the proper procedures for packaging meat; classify types of wrapping systems with their related characteristics.

Packaging Merchandise. To package meats properly, definite procedures, equipment, and training are required. It cannot be overemphasized how essential proper wrapping is to the patron. Proper tightly sealed packages enhance bloom and cause the product to appear more attractive and palatable. Improperly wrapped packages are passed over and remain in the case. When cuts of meats have lost their bloom and eye appeal, convert them to other products through reprocessing.

MODEL NO		ROLL SIZE	MACHINE SETTING (LENGTH OF PRODUCT IN INCHES)
A TRAYS			
1	FLAT PACKAGE	11	11
	ROAST OR BULK PACKAGE	12	12
1½	FLAT PACKAGE	11	11
	FULL PACK OR LARGE ITEM	12	12
2	FLAT PACKAGE, FULL PACKAGE OR SHINGLED	14	14
8	FLAT PACKAGE	16	16
2 – S	FLAT PACKAGE	12	12
	BULGING PACK	14	14
4 – S	FLAT PACKAGE	14	14
	BULGING PACK	16	16
8 – S	FLAT PACKAGE	16	16
	FULL PACK ¾" THICK ITEM	18	18
10 – S	FLAT PACKAGE	14	14
	OVER ¾" THICK ITEM	16	16
12 – S	FLAT PACKAGE ¾" THICK ITEM	18	18
15 – S	FLAT PACKAGE	11	11
17 – S	FLAT PACKAGE	12	12

Figure 5–1. Film roll size and machine setting for cut

MODEL NO.	L W D (INCHES)	USAGE
TRAYS		
1	5 X 5 X 1	CHOP SUEY, GROUND BEEF, KIDNEY, BULK SAUSAGE, HAM FOR SEASONING, PORK HOCKS, SMALL ROAST
1½	8 X 3½ X 1	SHORT RIBS, TONGUES, PORK HEARTS, WHOLE FRYERS, CHICKEN WINGS, BEEF STEW
2	8 X 5½ X 1	GROUND BEEF, BEEF HEARTS, TRIPE, PORK FEET, CHICKEN NECKS AND BACKS, CHICKEN BREASTS, CUT UP FRYERS, CHICKEN LEGS AND THIGHS
8	10 X 8 X 1	HEAVY ROASTS
2 – S	8 X 5½ X 5/8	CLUB STEAK, PORTERHOUSE, RIB STEAK, T-BONE STEAK, CUBE STEAK, RUMP ROAST, BONELESS CHUCK ROAST, LAMB CHOPS, VEAL CHOPS, VEAL STEAK, VEAL ROAST, PORT CHOPS, SPARE RIBS, PORK ROAST, ROLLED PORK ROAST, PORK STEAK, SIRLOIN TIP STEAK, SIRLOIN TIP ROAST
4 – S	9 X 7 X 5/8	CHUCK ROAST, CORNED BEEF, ROUND BONE, PORK STEAK, BONELESS CHUCK ROAST, POTERHOUSE, RIB STEAK, CHUCK STEAK, SIRLOIN TIP ROAST
8 – S	9 3/4 X 7 3/4 X 5/8	CHUCK ROAST, ROUND BONE, POT ROAST, FULL CUT ROUND STEAK, SIRLOIN STEAK, FULL CUT SWISS STEAK, CHUCK STEAK
10 – S	10½ X 5½ X 5/8	BOTTOM ROUND STEAK, TOP ROUND STEAK, PINBONE SIRLOIN STEAK, FLANK STEAK
12 – S	10 3/8 X 8 3/8 X 5/8	FULL CUT LARGE ROUND STEAK, FULL CUT LARGE SWISS STEAK, SIRLOIN STEAK BONE IN, WHOLE VEAL BREAST
15 – S	5 5/8 X 4 5/8 X ½	FORMED GROUND BEEF, SLICED LUNCHEON MEATS, AND BOILED HAM
17 – S	8 X 4 X 5/8	SHORT RIBS, CENTER CUT BEEF SHANK, VEAL AND LAMB PATTIES, LAMB LOIN CHOPS

Figure 5–2. Meat packaging trays

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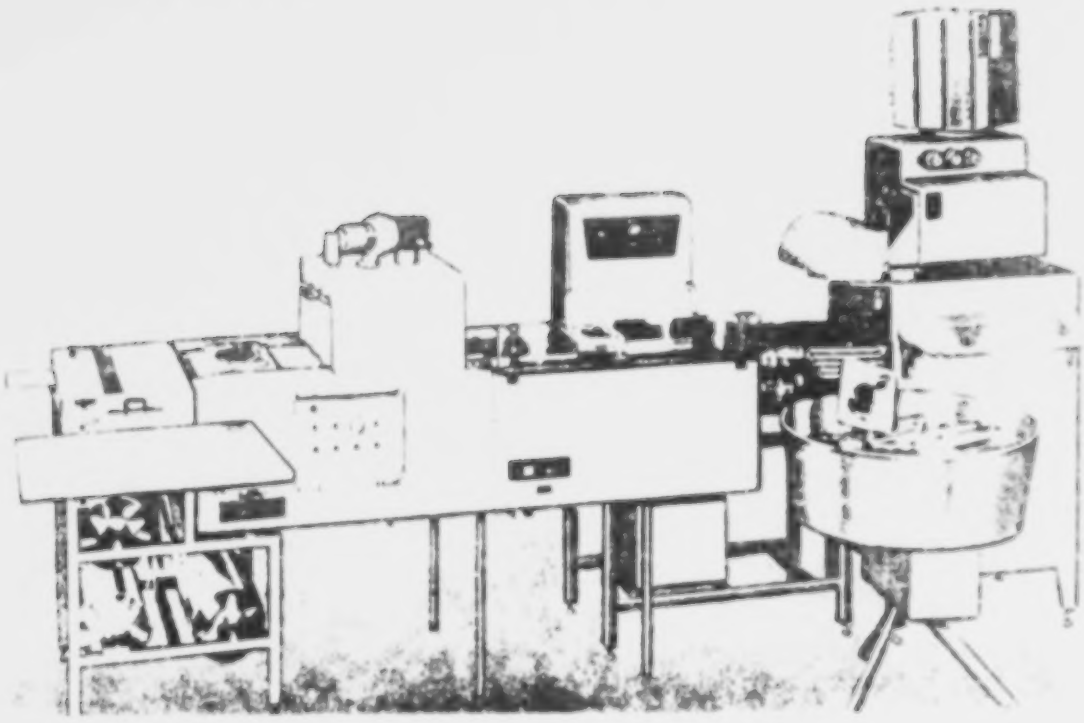

Figure 5-3. Handwrap station connected by conveyor to shrink tunnel, automatic scale, and labeler.

Principles. Packaged meats must represent accurately the quality of the contents of the package. Keep the following principles in mind when packaging meats:

a. Select packaging supplies that are economical in cost, are compatible with the equipment, and require little manpower.

b. Select packaging material that protects the meat and enhances its appearance until it is prepared for consumption.

c. Cut and trim all meat to insure a minimum of exposed bones that may puncture or break packages.

d. Tailor package to the cut of meat.

Automatic wrapping and pricing. A completely automatic wrapping system consists of a wrapping machine with a built-in shrink tunnel, a conveyor, an automatic weighing and computing scale, and a labeler. No initial overwrap by the operator is required. The wrapping machine accepts trays within a given range of sizes. Most machines are available with multiple film arbors. You select the required size of film by turning a control to draw film from the arbor desired.

Handwrap (automatic weighing and labeling). This system consists of a handwrap station connected by conveyor to a shrink tunnel and an automatic scale and labeler, as shown in figure 5-3. Handwrap stations also have multiple film arbors that hold rolls of film of various sizes. The weighing and computing scale and labeler is fully automatic and operates in the same manner as with the automatic wrapping system.

Handwrap stations. Handwrap stations, as shown in figure 5-4, may be either of the console type (A) or of the tabletop type (B). The station has suspended rolls of film, a hot wire cutoff, and a built-in hotplate for sealing packages. The station may be used with either the automatic, semiautomatic, or manual sealing system.

Exercises (037):

1. Why is proper packaging so important?

2. What should you do with meats that have lost their bloom and eye appeal?

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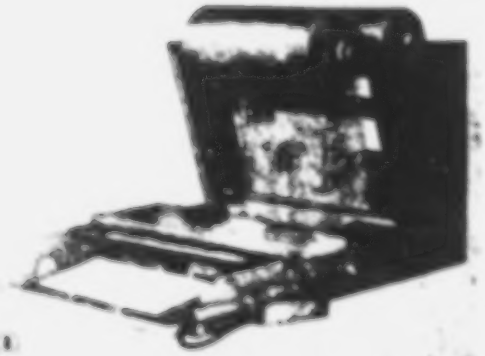
3. Match each wrapping system in column B with its related appropriate characteristics in column A. Each item in column B may be used more than once.

Column A Characteristics	Column B Wrapping Systems
____ (1) Consists of a built-in shrink tunnel, conveyor, and automatic scale	a. Automatic machines b. Handwrap stations
____ (2) Multiple film arbors	
____ (3) Console or tabletop type	
____ (4) Consists of suspended rolls of film, hot wire cutoff, and built-in hotplate	

038. Classify selected characteristics of scales with their related, appropriate type of scaling system.

Scaling Systems. Scales must be checked for accuracy, leveled, and adjusted before each day's operation. Do not use that require maintenance. Post signs on those needing maintenance or not weighing correctly. It is the manager's responsibility to insure that all scales are in proper order and adjusted to zero balance. He or she inspects packages at random to insure correct weight and prices. Before you weigh and wrap meat items, be sure that scales are properly calibrated to allow for the weight of the packaging materials. Three scaling systems are authorized: (1) automatic, (2) semiautomatic, and (3) manual systems. We discuss these next in the order named.

(A)



(B)

Figure 5-4. Handwrapping stations.

Automatic systems. One system consists of three components: the scale, the label producer, and the label activator. After a slug indicating the name of the item is inserted and price dials are set, the system automatically weighs, computes, and issues a label. If the system is connected to the automatic wrapping and pricing machine, the scale will automatically place the label on each package. If used in conjunction with handwrap stations, the package of meat is manually placed on the label activator containing the label which results in the label affixed to the outside of the package.

The other automatic system contains the entire system for weighing, computing, and labeling in one compact housing. The actions of both systems are similar and obtain the same results.

Semiautomatic system. This system also consists of three components: a scale with a keyboard attachment, a label printer which is electrically interlocked with the keyboard to operate as a unit, and a label activator. The keyboard indicates the price per pound.

Manual system. This system likewise consists of three components: prepack scale, label printer, and label activator. The scale contains a dial which the operator uses to set the price per pound. When a package is placed on the scale, it weighs and computes the total price of the package. The operator inserts a name plate slug into the label printer, so that the name of the item will appear on the printed label. The label printer has a keyboard by which the operator manually transposes information (weight and total price) produced by the scale. The label is then manually placed on the third component, the label activator.

Maintenance. Periodic maintenance is performed on wrapping machines a minimum of twice annually. The manufacturers calibrate and verify the accuracy of the scales and tag them to reflect this calibration.

Exercises (038):

1. Match each characteristic in column B with its related type of scaling equipment in column A. Each item in column B may be used more than once.

Column A Scaling Equipment	Column B Characteristics
____ (1) Automatic scale	a. Weight and total price manually transposed on keyboard
____ (2) Semiautomatic scale	b. The keyboard is used to set the prices per pound
____ (3) Automatic scale in compact form	c. Housing contains weighing, computing, and labeling equipment in one unit
____ (4) Manual scale	d. Prepack scale
	e. Automatically weighs, computes, prints, and issues a label

039. Identify rules for proper display of meat items.

Display and Rotation. We now come to the final, and one of the most important processing steps, the displaying of meat items. We will talk here about some of the most desirable display techniques. We will also discuss the importance of rotating meat items.

Display layout. The most efficient display layout is one in which you can put meat into the display case from behind. The wrapping room, if possible, should be directly behind the display cases. Otherwise, it takes more time and effort to reload the case and also distracts customers. A pan dolly rack, or similar aid, is used to move meat from the scale to the display case.

Signs for meat displays should not be hand printed, but made with black lettering on a sign-making machine. Neat signs add to the attractiveness of your display. Commercial signs are available in a wide variety and you should use them whenever possible.

Display arrangements. You will find display cases stocked in one of two ways: (1) grouped by type of meat (beef, veal, lamb, pork, etc.), or (2) grouped by method of cooking (roasts, broiling meats, and braising meats). A key display feature is to keep the entire bottom of the case filled at all times (the customer likes to feel that he has a wide selection). During slack periods, a single layer is usually enough, but during busy periods, items may be stacked two or three layers deep. It is best to arrange items by types—all beef together, all pork together, etc. This arrangement aids customers in identifying meats. They are accustomed to seeing beef in a certain section of the case. Then, too, meats such as beef and pork contrast in color. Keep contrasts down by using the type-of-meat grouping plan. If it is necessary to relocate a certain cut of meat, use appropriate signs to direct the shopper to the new location.

Display lighting. Good lighting helps the customer to read signs, labels, and prices, and makes the case more attractive. What color should use lighting be? When only fluorescent light is used, the soft white-natural fluorescent tubes, because its peakness tends to make up partly for the lack of incandescent sparkle. When fluorescent light is used in combination with incandescent, deluxe cool white is preferred.

Rotation of meat. In the delicatessen display case, place tray meats so that the oldest cuts are nearest the clerk and toward the rear of the display case. In the self-service display case, the reverse is true. This will provide for proper rotation of processed articles. In meat departments with multiple deck display cases, use the top portion of the display for smoked meats and sausage items. Code date all meat items to assure that the freshest meat is always available to the customer.

Exercises (039):

1. What is the best grouping method for stocking display cases?

2. What is the best type of lighting to use over a meat display section?

3. State the proper procedure for rotating processed meats in self-service type display cases.

Grading and Cooking Meats

IN THE PRECEDING chapters, we have discussed the majority of the information that you will need to progress in your career field. However, as we stated at the beginning of Chapter 1, you will be required to do many other tasks.

AFCOMS's policy of providing the very best service possible to its customers has made it necessary for meatcutters to expand their knowledge of meats beyond the normal processing, preparing, and displaying. There are many ways in which the meat department can improve customer service. In this chapter, we will discuss two areas where your knowledge can greatly improve customer service—grading and cooking meats.

Because of meat prices, it is very important that commissaries receive proper meat grades. We will discuss the grading of beef, veal, calf, lamb, and pork. You will be able to see the difference between quality grades and yield grades and what each means. Also, we will look at some methods of cooking meats. Why? Many times customers will ring the bell at the meat counter and ask how to cook a certain kind of meat. We will look at some ways to cook meats so you won't have to say "I don't know," when a customer asks you.

6-1. Grading Meats

The Federal grading of meat is a voluntary service, provided under the Agricultural Marketing Act of 1946, which is designed to facilitate the marketing of livestock and meat. The cost of Federal meat grading is paid for by fees collected from the users of the service.

040. Cite the types of evaluations used by the USDA beef grading system; explain the purpose of beef quality and beef yield grades, and list the quality grades used in commissaries.

Grading System. The U.S. Department of Agriculture (USDA) beef grading system includes two separate kinds of evaluations. One is for quality, indicating the tenderness, juiciness, and flavor of the lean. The other is for yield of retail cuts in a carcass.

Quality Grades. Each USDA beef grade is a measure of a distinct level of quality. The two major factors used in evaluating the quality or palatability of beef are marbling and maturity. Marbling is the flecks of fat within the lean, and maturity is the age of the beef. Generally, marbling increases beef eating quality, and increasing age has the opposite effect. One factor that is no longer used in beef quality grading is conformation or carcass shape. Revisions in USDA standards in February 1976 eliminated this factor.

Because beef can vary so much in quality, it takes eight grades to span the range—USDA prime, choice, good, Standard, commercial, utility, cutter, and canner. The commissary meat departments ordinarily buy the grades of prime and choice, and, upon written request, USDA good.

Prime. Prime grade beef is the most tender, juicy, and flavorful. It has lots of marbling which enhances both flavor and juiciness. Most prime and choice beef is produced from cattle about 18 to 24 months old.

Choice. Choice grade beef is quite tender, juicy, and flavorful. It also has a lot of marbling to enhance both the flavor and juiciness. Retailers have found that the choice grade beef is preferred most by their customers.

Good. Good grade beef often pleases thrifty shoppers because it is leaner than the two higher grades mentioned above. It is relatively tender, but because it has less marbling, it lacks some of the juiciness and flavor of higher grades.

Other grades. USDA utility, cutter, and canner grades of beef are seldom, if ever, sold as retail cuts. They go mostly into ground beef or into processed meat products.

Yield Grades. Yield grades indicate beef carcass cutability or the amount of usable meat a carcass will yield after the waste fat has been trimmed off. The numbers 1 through 5 are used to identify the yield grades. Yield grade 1 is the highest yield of retail cuts and yield grade 5 is the lowest. The two types of grades—quality and yield—are independent of each other. Carcasses in the same quality grade, choice for example, can vary from yield grade 1 to yield grade 5. The quality grade and yield grade together indicate the total value of a beef carcass, giving a measurement of both quality and quantity of lean meat.

Exercises (040):

1. What are the two types of evaluations used by the USDA beef grading system?

2. What does the beef quality grade indicate?

3. What factor is no longer used in beef quality grading?

4. What beef quality grades are used in commissary meat departments?

5. What does the beef yield grade indicate?

6. What yield grade indicates the highest yield of retail cuts?

041. Distinguish between selected true-false statements pertaining to grading veal and calf.

Veal and Calf Grading. The standards used in the quality grading of veal and calf differ from those used in beef quality grading. Where there are eight grades that make up the beef quality grading system, only five are used in grading veal and calf. The specified grades are prime, choice, good, standard, and utility.

Veal and Calf Characteristics. Differences between veal, calf, and beef carcasses are made primarily on the basis of the color of the lean. Other important factors are the texture of the lean and character of the fat; however, you should also consider the color, shape, and ossification of the bones and cartilages.

Typical veal carcasses have a grayish pink color of lean that is very smooth and velvety in texture. Veal carcasses also have a slightly soft, flexible character of fat and marrow, and red rib bones. By contrast, typical calf carcasses have a grayish red color of lean, flakier fat, and somewhat wider rib bones with less red color. Veal and calf are graded using a composite evaluation of two general grade factors—conformation and quality.

Conformation. Conformation of carcass shape discriptions included in each of the grade specifications refers to the thickness and fullness of the carcass and its various parts. You evaluate the conformation of veal and calf by taking various parts of their carcass and evaluating each part separately for shape. You then combine the evaluations of all parts together to get an average of the conformation of the whole carcass. In doing these evaluations, consider the size of each part evaluated as compared with other parts.

Quality. In veal carcasses, unribbed calf carcass, and ribbed calf carcasses where the degree of marbling is not a consideration, quality can be evaluated by using certain factors. One is the amount of feathering (fat intermingled with the lean between the ribs), and second is the quality of fat streakings within and upon the inside flank muscles. In making these evaluations, the grader considers the amount of feathering and flank fat streakings in relation to color (veal) and maturity (calf). In addition, the grader considers other factors if he or she feels that these factors will result in a more accurate quality assessment. Examples of such factors include: the firmness of the lean; the distribution of feathering; the amount of fat covering over the diaphragm or skirt; and the amount and character of the external kidney and pelvic fat.

Exercises (041):

1. Place the letter "T" in front of correct statements.

___ a. Veal and calf quality is graded by the same eight quality grades as beef.

___ b. The color of the lean is the primary basis in distinguishing between veal, calf, and beef.

___ c. Typical veal carcasses have a grayish red color of lean and flaky fat.

___ d. Veal and calf are graded using a composite evaluation of yield and quality.

___ e. The grader can consider factors other than feathering and quantity of fat to get a good quality assessment.

042. Cite the differences in grading lamb, yearling mutton, and mutton carcasses, and state the characteristics to use in grading each carcass.

Grading of lamb, yearling mutton, and mutton carcasses is based on developmental differences in their muscular and skeletal systems.

Lamb Carcasses. Lamb (sheep less than 1 year old) carcasses have slightly wide and moderately flat rib bones. The lean is light red and has a fine texture. Lamb carcasses also have break joints on their front shanks.

Yearling Mutton Carcasses. Yearling mutton (sheep 1 to 2 years old) carcasses have moderately wide rib bones which tend to be flat. They have a slightly coarse texture of lean and may have either break joints or "spool" joints on their front shanks.

Mutton Carcasses. Mutton (sheep over 2 years old) carcasses have wide, flat rib bones and a dark red, coarse texture of lean. These carcasses have spool joints on their front shanks.

Grading Lamb. As in beef grading, lamb, yearling mutton, and mutton grading is based on two separate evaluations of quality and yield. Quality indicates conformation and characteristics of the lean. Yield indicates the estimated amount of closely trimmed, boneless, major retail cuts to be derived from the carcass. There are five quality grades for lamb and yearling mutton—prime, choice, good, utility, and cull; mutton, however, is not eligible for the prime grade. The same five numbers (1 through 5) used in beef, veal, and calf yield

grading are used to grade lamb and mutton. The lowest number represents the highest yield or degree of cutability.

Quality Grading. You can best evaluate the quality of the lean by looking at the texture, firmness, and marbling in a cut surface in consideration with the age of the carcass. You cannot actually see these characteristics in grading a carcass; however, you can indirectly evaluate the quality of the lean by considering the feathering (fat intermingled within the lean between the ribs) and the streaking of fat within and upon the inside flank muscles. Also, check the firmness of the fat and lean. Consider all of these factors in relation to the maturity of the carcass.

If you remember, conformation is no longer a factor in quality grading beef. It is still considered an important factor in quality grading lamb and mutton carcasses. Conformation evaluationss of lamb, yearling mutton, and mutton carcasses refer to the relative development of the muscular and skeletal systems; however, consider the thickness and fullness of the carcass and its various parts in evaluating for conformation. Evaluate various parts of the carcass separately for individual conformation. Consider not only the proportion of each cut of the carcass, but also the general desirability of each cut as compared to other cuts. Combine the conformation evaluations of individual parts to get an average evaluation of the whole carcass.

Yield Grading. As we said before, lamb and mutton yield is graded on the same numbering system (1 through 5) as beef, veal, and calf. The yield grade of a lamb or mutton carcass is determined on the following three characteristics: the amount of external fat, the amount of kidney and pelvic fat, and the conformation grade of the legs. You can evaluate the amount of external fat for carcasses with a normal distribution of fat by checking the thickness over the center of the ribeye muscle. Then, measure perpendicular to the outside surface between the 12th and 13th rib. On intact carcasses, measure fat thickness by probing or examining the carcass thoroughly.

Exercises (042):

1. What characteristics determine the grading of lamb, yearling mutton, and mutton carcasses?

2. What are the normal characteristics of the lean in a lamb carcass?

3. Name the two types of grading evaluations used in grading lamb, yearling mutton, and mutton carcasses.

4. How is the quality of lamb and mutton lean best evaluated?

5. State the factor that is no longer used in beef quality grading, but is used in lamb and mutton quality grading.

6. State the three characteristics used to determine lamb and mutton yield grades.

043. Cite specific factors used in grading pork.

Pork Grading. The USDA standards for grades of pork carcasses provide for separation according to class and grade. Class is determined by the apparent sex of the animal at the time of slaughter. Grade reflects the quality of pork and the relative proportion of lean cuts to fat cuts in the carcass.

The grades for barrow (a castrated pig) and gilt (a young female pig) carcasses are based on the two general considerations. The first is quality, indicating the characteristics of the lean, and second, is the expected combined yields of the four lean cuts—ham, loin, picnic shoulder, and Boston butt.

Quality grading. You can bet evaluate the quality of pork lean by looking at a cut surface of a major muscle, if this type of surface is available. In these cut surface evaluations, consider the texture, firmness, and marbling. A good example of a major muscle that can be checked for lean quality is the loin eye muscle at the 10th rib. When the cut surface of a major muscle is not available, evaluate the quality of the learn indirectly, based on quality indicating characteristics that are evident in pork carcasses.

Yield grading. Pork yield grades are based entirely on the expected carcass yields of the ham, loin, picnic shoulder, and Boston butt. The following are the minimum pork yield grades: U.S. No. 1, 53 percent and over; U.S. No. 2, 50 to 52.9 percent; U.S. No. 3, 47 to 49.9 percent; and U.S. No. 4, less than 47 percent. No consideration is given to a development of quality superior to these described as minimum for pork grades.

Exercises (043):

1. The USDA provides for segregation of pork carcasses according to what factors?

2. How is lean quality best evaluated?

3. What are pork yield grades based on?

6-2. Cooking Meats

In this section, we will discuss some methods of cooking meats such as roasting and broiling. We will also discuss cooking meats in liquid and moist heat cooking or braising meats.

044. State the meaning of roasting, and cite specific facts related to roasting meats.

Roasting Meats. Roasting is a dry-heat cooking method used for relatively tender large cuts of meat, usually in an oven. When roasting meat in the oven, use an open pan with no liquid added. Place the meat on a rack so that it is held out of its drippings as it cooks. Some roasts have bones which serve as a natural rack. A good example of such a roast is beef rib.

Research has shown that meat can be satisfactorily roasted while frozen and still yield as much meat as roasts partially or completely thawed. Basically, the same cooking procedures apply to both frozen and fresh meats since they are both roasted at the same constant low temperature. However, additional cooking time is required for frozen roasts as compared to cooking fresh or chilled roasts. The additional cooking time for frozen roasts includes the recommended cooking time plus another one-third to one-half of the time recommended for cooking refrigerator-chilled roasts (36° to 40° F.).

It is difficult to make a roasting timetable that would apply to all kinds of roasting. The many variables involved in meat cuts, cooking procedures, and cooking equipment makes it difficult to do. Figure 6-1 is a timetable for roasting some of the common cuts of meats. It gives some approximate weights, oven temperatures, and cooking times. This timetable is based on cooking meats at refrigerator temperature (36° to 40° F.).

Once a roast has finished cooking, it should be allowed to set or rest in a warm place for 15 to 20 minutes before it is carved. This resting period allows the roast to become more firm, retain more juices, and makes it easier to serve.

Exercises (044):

1. State the meaning of roasting.

2. How much additional cooking time is required to cook a frozen roast as compared to cooking a chilled roast?

3. What should be done with a roast once it has finished cooking?

045. State the meaning of broiling; procedures for broiling meats.

Broiling Meats. Another dry-heat cooking method is broiling. Broiling is a dry-heat cooking method using direct or intense radiant heat. This method is used to cook small individualized meat cuts such as steaks, chops, and patties or hamburgers. Individual cuts for broiling should be between 1 and 2 inches thick for the best results. Broiled meat should not be seared. Searing does not seal in the juices but increases the broiling loss instead.

Figure 6-2 is a recommended timetable for broiling meats. Shown is a list of commonly broiling cuts of meat with recommended thickness and cooking times. The following is a list of procedures used to broil meats in an oven:

a. Set the oven regulator for broiling.

b. Place the meat in a broiling pan, 3 to 5 inches from the heat (increase distance for frozen meat.)

c. Turn the meat once during cooking.

d. Season meat only after the side is browned. (Salt tends to draw the moisture to the surface of meat, causing it to dry out.)

e. Broil the second side to the desired doneness, seasoning further if desired. Serve at once.

To check broiled meat for its degree of doneness, make a small slit or cut in the steak or chop with a sharp knife. Simply look at the internal meat to determine how done it is. If the steak or chop is cut bone-in, make the small slit near the bone. This area is usually the least done.

Exercises (045):

1. State the meaning of broiling.

2. What degree of thickness should individual meat cuts be for broiling?

3. When should broiled meat be seasoned?

4. How is broiled meat checked for doneness?

046. Differentiate between methods of cooking meats in liquids and braising meats.

Cooking in Liquid. Cooking in liquid involves the cooking of meats covered with water or other liquids. Meat (large cuts and stew meat) cooked in liquid should be simmered and not boiled. When meat is simmered on cook below the boiling point, there is less shrinkage and more flavor, tenderness, and juiciness. Simmering occurs when the bubbles of the cooking liquid do not burst through the

CUTS	APPROX. WEIGHT	APPROX. COOKING TIME (MINUTES PER LB.)
BEEF (300F – 325F OVEN TEMPERATURE)		
RIB ROAST	6 TO 8	25 TO 30
RIB EYE ROAST	4 TO 6	20 TO 22
TENDERLOIN WHOLE	4 TO 6 (425 OVEN TEMP)	45 TO 60 (TOTAL TIME)
TOP LOIN BONELESS ROAST	10 TO 12	10
TOP SIRLOIN ROAST	8	25
TOP ROUND ROAST	4 TO 6	25 TO 30
RUMP ROAST ROAST	4 TO 6	25 TO 30
SIRLOIN TIP ROAST	3 TO 4	35 TO 40
GROUND BEEF LOAF	1 TO 3	1 TO 1½ HOURS
PORK (300F TO 350F OVEN TEMPERATURE)		
LOIN CENTER	3 TO 5	30 TO 35
HALF LOIN	5 TO 7	35 TO 40
BLADE END LOIN	3 TO 4	40 TO 45
ARM PICNIC SHOULDER		
BONE-IN	5 TO 8	30 TO 35
BONELESS	3 TO 5	35 TO 40
BOSTON BUTT	4 TO 6	40 TO 45
FRESH HAM		
WHOLE BONE-IN	12 TO 16	22 TO 26
WHOLE BONELESS	10 TO 14	24 TO 28
HALF BONE-IN	5 TO 8	35 TO 40
TENDERLOIN	ONE-HALF TO 1	45 TO 60
SMOKED PORK		
HAM WHOLE	10 TO 14	18 TO 20
HAM HALF	5 TO 7	22 TO 25
HAM SHANK PORTION	3 TO 4	35 TO 40
HAM RUMP PORTION	3 TO 4	35 TO 40
LOIN	3 TO 5	25 TO 30
SHOULDER BUTT ROLL	2 TO 4	35 TO 40
CANADIAN BACON	2 TO 4	35 TO 40
LAMB (300F TO 325F OVEN TEMPERATURE)		
LEG	5 TO 9	25 TO 30
LEG SHANK HALF	3 TO 4	30 TO 35
LEG SIRLOIN HALF	3 TO 4	25 TO 30
LEG BONELESS	4 TO 7	30 TO 35
RIB	2 TO 3 (375F OVEN TEMP)	30 TO 35

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Figure 6-1. Timetable for roasting meats.

CUTS	THICKNESS	APPROX. TOTAL COOKING TIME
BEEF		
RIB, RIB EYE	1 IN.	15 TO 20
PORTERHOUSE	1 IN.	20 TO 25
TOP LOIN	1½ IN.	20 TO 25
T-BONE, SIRLOIN	1½ IN.	30 TO 35
FILLET	4 TO 8 OZ.	15 TO 20
CHUCK STEAK	1 IN.	25 TO 30
CHUCK STEAK	1½ IN.	40 TO 45
PORK		
RIB & LOIN CHOP	¾ IN. TO 1 IN.	20 TO 25
SHOULDER STEAK	½ TO ¾ IN.	20 TO 25
HAM SLICE (SMOKED)	½ IN.	10 TO 12
HAM SLICE (SMOKED)	1 IN.	16 TO 20
LOIN CHOP (SMOKED)	½ TO ¾ IN.	15 TO 20
CANADIAN BACON (SMOKED)	½ IN.	6 TO 8
LAMB		
SHOULDER CHOP	¾ TO 1 IN.	10 TO 20
RIB CHOP	1 IN.	12
LOIN CHOP	1½ IN.	18
SIRLOIN CHOP	¾ TO 1 IN.	12 TO 14
LEG CHOP	¾ TO 1 IN.	14 TO 18

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Figure 6–2. Timetable for broiling meats.

surface. The cooking temperature range for simmering is from 185° to 208° F. Figure 6-3 gives some approximate weights and cooking times for cooking some common cuts of meats in liquid. The liquid left over from simmering meats is well-flavored and very nutritious. It should be used for sauces, gravies, stock, or other dishes whenever possible.

Braising Meats. Braising or moist heat cooking is done by browning meat in fat and then simmering the meat in a covered pan with a little liquid. Meat can be browned in its own fat or other fats may be added. The meat must be browned on all sides before adding the liquid for simmering in the covered pan. The meat may be cooked in its own juices after browning or a liquid can be added. Cooking should be done at a slow pace for more flavor, tenderness, and juiciness. Figure 6-4 shows some approximate degrees of thickness and cooking times for braising some of the common cuts of meats.

Exercises (046):

1. Place the letter "T" in front of correct statements. Correct any false statements.

___ a. When cooking meats in liquid, the meat should be placed in boiling water for less shrinkage.

___ b. Simmering is best achieved when the cooking temperature range is 208° to 275° F.

___ c. Meat can be browned in its own fat when braising.

___ d. For added flavor, braise meats at a fast pace to enhance the juiciness.

COOKING IN LIQUID

CUTS	APPROX. WEIGHT	APPROX. TOTAL COOKING TIME
BEEF		
FRESH OR CORNED BEEF	4 TO 6 LBS	3½ TO 4½ HRS
SHANK CROSS CUT	4 TO 5½ LBS	2½ TO 3 HRS
BEEF FOR STEW		2½ TO 3½ HRS
PORK		
FRESH SPARE RIBS		2 TO 2½ HRS
FRESH COUNTRY-STYLE RIBS		2 TO 2½ HRS
FRESH HOCKS		2½ TO 3 HRS
SMOKED HAMS, WHOLE	10 TO 16 LBS	4½ TO 5 HRS
SMOKED HAMS, WHOLE	5 TO 8 LBS	3 TO 4 HRS
ARMED PICNIC-SHOULDER	5 TO 8 LBS	3½ TO 4 HRS
SHOULDER ROLL	2 TO 4 LBS	1½ TO 2 HRS
LAMB		
STEW	1 TO 1½ PIECES	1½ TO 2 HRS

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Figure 6-3. Timetable for cooking meats in liquids.

MOIST HEAT COOKING
(BRAISING AND COOKING IN LIQUID)

TO BRAISE MEAT, IT IS FIRST BROWNED ON ALL SIDES IN ITS OWN FAT OR OTHER FAT MAY BE ADDED. A SMALL AMOUNT OF LIQUID MAY BE ADDED OR IT MAY BE COOKED IN ITS OWN JUICES. COOKING SHOULD BE DONE SLOWLY.

BRAISING

CUTS	THICKNESS	APPROX. TOTAL COOKING TIME (HRS)
BEEF		
POT ROAST	3 TO 5 LBS	2½ TO 3½ HRS
SWISS STEAK	1½ TO 2½ LBS	2 TO 3 HRS
FLANK STEAK	1½ TO 2 LBS	1½ TO 2½ HRS
ROUND STEAK	¾ TO 1 IN	1 TO 1½ HRS
PORK		
CHOPS	¾ TO 1½ IN	45 TO 60 MIN
SPARE RIBS	2 TO 3 LBS	1½ HRS
COUNTRY-STYLE RIBS		1½ TO 2 HRS
TENDERLOIN, WHOLE	¾ TO 1 LB	45 TO 60 MIN
SHOULDER STEAKS	¾ IN	45 TO 60 MIN
LAMB		
SHOULDER CHOP	¾ TO 1 IN	45 TO 60 MIN
SHANKS	¾ TO 1 LB EACH	1 TO 1½ HRS
LAMB FOR STEW	1½ IN PIECES	1½ TO 2 HRS

Figure 6-4. Timetable for braising meats.

Meat Department Management

FROM THIS CHAPTER you will learn effective techniques for management of a commissary meat department. The four general areas we will cover are: (1) equipment, (2) planning and scheduling, (3) inspections and evaluation, and (4) tests and pricing procedures.

7-1. Equipment

In this section, we will discuss the categories of equipment and operating supplies authorized in the meat department. We will also examine how to determine the quantity of equipment that is authorized and, last but not least, how equipment and operating supplies are controlled.

047. Identify by category the types of meat department equipment; and state how operating supplies are authorized and the fund used for purchasing them.

Category I Equipment. Category I equipment consists of major items of equipment, such as display cases, automatic wrapping machines, grinders, and bandsaws. Contracts for maintenance and repair of this type of equipment may also be authorized. The contracts may cover such services as replacement of saw blades, sharpening and replacement of knives and plates for grinders, and maintenance and inspection of scales. The quantity of Category I equipment that may be purchased is determined by the classification of the store, which is based on the average monthly sales for the latest 3-month period. Only the actual quantity of equipment that can be used efficiently should be procured. This type of equipment is normally obtained by local procurement.

Category II Equipment. Category II equipment consists of miscellaneous items, such as pans and meat wrapping stations. The commissary may requisition this type of equipment from base supply on a reimbursable basis, obtain it directly from the General Services Administration (GSA), or purchase it locally. The store manager is responsible for determining the quantity of each item purchased.

Operating Supplies. Items required for the operating of the store with a unit cost of less than $500 may be obtained as operating supplies. These items consist of such items as handtools, cleaning supplies, knives and plates for grinders, packaging trays, and wrapping films. Operating supplies may be obtained from base supply on a reimbursable basis or directly from the GSA.

Funds for Purchase. Unless otherwise indicated or limited, all items of Categories I and II equipment and operating supplies are purchased with the surcharge revolving fund. This includes the cost of equipment, certain installation costs, and the cost of maintenance.

Exercises (047):

1. Identify each of the following items as belonging to either Category I or Category II equipment.

   _____ a. Meat grinder.
   _____ b. Bandsaw.
   _____ c. Wrapping station.
   _____ d. Display case.
   _____ e. Pans and racks.

2. State how the quantity of Category I equipment is determined and obtained.

3. Who is responsible for determining the quantity of category II equipment items to purchase?

4. List four items that may be procured as operating supplies.

5. What fund is used for purchasing equipment and operating supplies?

048. Specify procedures for the control of equipment and supplies.

Controlling Equipment. Final accounting for equipment and supplies is the ~~of the~~ responsibility of the store manager, but he must have help from the meat department manager to make the system work. To this end everyone in the store must be careful to turn in required forms that reflect the actual supplies and equipment on hand. An inventory of all types of equipment is taken at least annually and when there is a change in store managers. A record of this equipment is maintained and is subject to audit.

Controlling Operating Supplies. All department managers have the responsibility of insuring good supply discipline. An operating level should be established for each item, ~~normally not to exceed 30 days consumption~~.

the Continental United States (CONUS). Since more surcharge funds are used for operating supplies than for any other authorized category, good supply discipline must be exercised in establishing levels in procuring, storing, and consuming supplies. The objective is to have sufficient quantities on hand while at the same time avoiding overstockage and waste. Operating supplies are inventoried monthly.

Exercises (048):

Identify each true statement and correct those that are false.

____ 1. An inventory of all types of equipment is taken at least annually.

____ 2. A record of equipment on hand is maintained and is not subject to audit.

____ 3. Operating levels of supplies normally should not exceed 60 days.

____ 4. More surcharge funds are used for operating supplies than for any other authorized category.

7-2. Planning and Scheduling

One of the supervisor's major duties is that of planning and scheduling, which involves organization and staffing, meat items authorized, daily assortment of items for sale, and meat purchases.

049. Explain the basic organization and staffing of AFCOMS.

Organization. The Air Force Commissary Service (AFCOMS) is a major command. The commander of AFCOMS has command jurisdiction over assigned personnel, facilities, property, and funds through a headquarters staff, two subordinate regional commanders overseas (Pacific and European), and 15 CONUS complex directors.

Complexes. Each CONUS complex is responsible to the AFCOMS commander, while our complexes overseas are responsible to the regional commander. Each region may have one or more complexes within the geographical area. Where a commissary complex has been formed, all functions above the store operation level are consolidated in the complex office. The regional commander and complex director are responsible for the operation of all commissaries. The satellite store manager is responsible to the commissary complex director for operation of the store.

Commissary (single). The commissary officer is responsible to the regional commander. The store manager provides overall guidance for operation of all three subdepartments (grocery, meat, and produce) and is responsible to the commissary officer. The meat department manager is responsible to the store manager for an efficient meat department operation.

Staffing. Authorizations for staffing are contained in AFM 26-3, *Air Force Manpower Standards*. This manual provides personnel authorization guidelines for each work center (commissary) on the basis of average monthly sales volume for the commissary store. The actual number of personnel at an individual store is determined by manpower authorities operating under Air Force directives on recommendation and advice of the store manager. All department managers have the responsibility of keeping the store manager informed of additional manpower authorizations that may be needed.

Exercises (049):

1. Who has jurisdiction over the overseas regional commanders?

2. How many complexes can each region have?

3. Who is responsible for the overall guidance for operation of the meat department?

4. How are the manpower authorizations determined at individual stores?

050. Cite meat or meat product items authorized to be stocked and sold in the meat department; indicate meat tenderizing processes and guidelines for stocking and selling fish.

Meat and Poultry. Refer to figures 7-1 and 7-2 for meat items authorized in the meat department. To avoid confusion in the location of certain items, grocery items are also listed. Whenever the possibility of cashier confusion exists regarding the proper department for recording of a sale, distinctive labels or markings are used for clarification. Note that the items indicated to the extreme right of figures 7-1 and 7-2 are the only meat items authorized to be stocked and sold in the meat department.

Pretenderized beef. Your commissary may also sell pretenderized beef. This is beef that has been injected with a tenderized substance before the animal is slaughtered. The tenderizing action takes place when the meat reaches a certain temperature while cooking. The three types of processes used for this tenderizing are: (1) papain-papaya,

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ARTICLES	GROCERY SUBSECTION	MEAT DEPARTMENT SUBSECTION
DAIRY PRODUCTS		
CHEESE, BULK, ALL TYPES, CUT AND PACKAGED IN MEAT DEPARTMENT		X
MEAT AND MEAT PRODUCTS		
BACON, CANADIAN, BULK		X
BACON, CANADIAN, PREPACKAGED	X1	X2
BACON, SMOKED, SLAB		X
BACON, SMOKED, SLICED, PREPACKAGED	X1	X2
HAM, COOKED, CANNED OR OTHERWISE REQUIRING REFRIGERATION		X
HAM, SMOKED, WHOLE		X
HAM, SMOKED, PROCESSED		X
BEEF AND BEEF PRODUCTS		
BRAINS		X
BONELESS, CHILLED OR FROZEN		X
CORNED, NOT CANNED		X
DRIED, SLICED, BULK		X
HEARTS		X
KIDNEYS		X
LIVER, BEEF		X
LIVER, CALF		X
OXTAILS		X
SWEETBREADS		X
TENDERLOIN		X
TONGUE, FRESH OR SMOKED (NOT CANNED)		X
TRIPE, BULK		X
WHOLESALE CUTS		X
LAMB		
CARCASS AND WHOLESALE MARKET CUTS		X
PORK		
BELLIES, DRY SALT CURED		X
BONELESS, SMOKED BUTTS		X
BOSTON BUTTS		X
FATBACKS, DRY SALT CURED		X
HAMS, FRESH		X
LOINS, BONE IN OR PARTIALLY BONED		X
SHOULDERS, FRESH OR SMOKED, INCLUDING PICNIC STYLE		X
SPARERIBS, HALF SHEET		X
VEAL		
SIDES, AND OR WHOLESALE CUTS		X

LEGEND 1 FROZEN, PREPACKAGED
2 CHILLED

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Figure 7–1. Location of meat and poultry items.

ARTICLES	GROCERY SUBSECTION	MEAT DEPARTMENT SUBSECTION
SHORTENING		
ALL TYPES, PACKERS, PREPACKAGED	X	
ALL TYPES, BULK		X
MEAT AND MEAT PRODUCTS (MISCELLANEOUS)		
CHILI CON CARNE (NOT CANNED)	X1	X2
HEADCHEESE, ANY PACKAGING REQUIRING REFRIGERATION	X1	X2
FROGLEGS	X1	X2
LUNCHEON MEAT, REQUIRING REFRIGERATION	X1	X2
MEATLOAF, ASSORTED	X1	X2
RABBIT, DRESSED, DOMESTIC	X1	X2
SAUSAGE, BOLOGNA		X
SAUSAGE, CERVELAT, DRY OR SOFT		X
SAUSAGE, FRANKFURTERS		X
SAUSAGE, LIVER		X
SAUSAGE, PORK, BULK OR LINKS		X
SAUSAGE, SALAMI		X
SAUSAGE, SCRAPPLE		X
SAUSAGE, OTHER		X
SAUSAGE, ALL TYPES, FROZEN, PREPACKAGED	X	
POULTRY		
CHICKEN, DRESSED, EVISCERATED		
FOWL, FRYERS, ROASTERS, BROILERS	X1	X2
CHICKEN, READY TO COOK		
BROILERS, CAPONS, FOWL, ROASTERS	X1	X2
PACKERS, PREPACKAGED, WHOLE OR PARTS	X1	X2
DUCKS AND GEESE, DRESSED, EVISCERATED	X1	X2
TURKEY, DRESSED, EVISCERATED	X1	X2
EGGS, FRESH	X	
WATER FOODS		
FISH		
FROZEN, PREPACKAGED OR BULK	X	
SALTED, SMOKED OR DRIED (NOT CANNED)		X
SHELLFISH—FRESH OR FROZEN	X1	X2
OTHER		
MEAT PIES	X	
MEAT DINNERS	X	
PORTION PACK (BRAND NAME STEAKS, CHOPS, PATTIES, ETC.)	X1	X2

LEGEND 1. FROZEN—PREPACKAGED
2. CHILLED

Figure 7-2. Location of meat and poultry items (continued)

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(2) bromelin-pineapple, and (3) ficin-figs. When this type of beef is sold, display signs are used advising patrons that the meat has undergone a tenderizing process and, if known, the required cooking temperature at which the tenderizing actions takes place. On the label of each retail cut, the name of the tenderizing process is listed. The purchase of name brand tenderized beef is not authorized. On orders to DPSC, the meat department must stipulate the type of tenderizing process desired.

Fresh fish. Prepackaged fresh fish is authorized to be stocked and sold under the following guidelines:

a. Procure fresh fish only from approved sources. Insure that these products are inspected in accordance with AFR 163–2, *Veterinary Food Inspection,* and that procedures comply with applicable portions of AFR 163–8, *Control of Foodborne Disease.*

b. See that all fish arrive at the commissary within 24 hours after processing.

b. Do not accept previously frozen fish, and reject items which do not arrive at the proper temperature.

d. Keep fish at a temperature of 35° F. or lower, but do not allow them to freeze.

e. Do not commingle fish products with meat products.

f. Meat department personnel will not perform steaking, filleting, packaging, or other processing of fish products.

g. Destroy ~~fresh fish products 48 hours after receipt~~ any fish remaining 4 days after processing date

Exercises (050):

1. Identify each of the following meat or meat products as being either located in the grocery department or the meat department.

___ a. Bacon, smoked, sliced prepackaged, frozen.
___ b. Beef, boneless, chilled.
___ c. Beef liver.
___ d. Shortening, all types, bulk.
___ e. Fish, salted, smoked or dried (not canned).

2. List three types of tenderizing processes used in pretenderized beef.

3. When must fresh fish arrive at the commissary after being processed?

051. Identify procedures pertaining to the proper operation of a delicatessen.

Delicatessen. A delicatessen section, on a clerk-service basis, is authorized as a part of the meat department. This "deli" will provide a variety of ready-to-eat meats or meat products and cheese. Note, too, that these items are not prepacked but rather displayed in bulk.

Since most deli sales are impulse motivated, a clean, wholesome appearance is very important to promote these sales. It is important to maintain sanitation standards. During the day's operation, areas (slicers, cutting boards, etc.) that come in contact with the deli products should be cleaned and sanitized. Unload and clean display cases at intervals not to exceed 6 days, using an approved cleaning solution. Keep deli backup chill boxes in a clean, orderly condition at all times. In order to prevent contamination of ready-to-eat products, do not process raw meats from the meat department in the deli section. The deli receives some items in a frozen state, such as turkey loaf, turkey breast, and roast beef. Then these items under refrigeration at a temperature of 45° F., no higher. Once these items are thawed, they are sold chilled.

Exercises (051):

1. How should meat items be displayed in a delicatessen section of the meat department?

2. How often should deli display cases be cleaned?

3. At what temperature should frozen items be thawed in the deli?

052. State factors used when deciding the amount and types of meat to be placed on sale.

Amount and Types of Meat. In deciding how much meat to display, use post sales as your main guide. By reviewing these past sales, you can almost predict the amount of sales on any given day of the week or month. Naturally, you must also consider the space available for display.

Factors to consider when deciding the types of meat to purchase and display are consumption data, customer preference, religious custom, holidays, season, and availability of the product. Only the highest quality meat items, consistent with price and customer acceptance, should be purchased and sold.

Meat Selection. The meat department must maintain, as a minimum, an adequate selection of beef, pork, poultry, and smoked meats. Also, a selection of lamb and veal is also recommended. To minimize patron requests for special cuts, supply adequate variations in thickness, sizes of steaks, and packaging of chops and roasts. You must accept special orders, in which trim is requested that differ from standard trim, and process them according to the wishes of the customer. However, first trim, weigh, and price the cut in standard form. Then trim it further to the specifications of the customer.

The following is a list of the minimum selections of retail cuts required in the display case:

a. Beef—20 cuts.
b. Pork—4 cuts.
c. Smoked pork—4 cuts.
d. Poultry—6 selections.

Specific meat items to be stocked at all times are:

a. Ground beef.
b. Sirloin steak.
c. T-bone and/or porterhouse steak.
d. Dry-heat roast.
e. Stewing beef.
f. Cube steak.
g. Chuck steak and/or roast.
h. Pork chops (loin-rib).
i. Pork roast end rib or half-loin half or end.
j. Ham, butt or end-slices, and shank half or end.
k. Chicken.

Exercises (052):

1. State the factors to consider when deciding the amounts of meat to be placed on sale.

2. State the factors to consider when deciding the types of meat to be placed on sale.

3. What quality of meat items should be purchased and sold by the meat department?

4. Identify the following statements pertaining to meat selection as being true or false. Correct any false statements.

___ a. As a minimum, meat departments must maintain an adequate selection of beef, pork, poultry, and smoked meats.

___ b. Steaks, chops, and roasts should be sold in one standard size.

___ c. There should be a minimum of 20 cuts of pork stocked in the display case.

___ d. The meat department manager has an option of stocking stewing beef or cube steak in the or she display cases at any time he chooses.

7-3. Tests and Pricing Procedures

In this section, we will discuss cutting tests, testing ground meats for fat percentage, inventories, and price adjustments.

053. State the purpose of a cutting test, and cite procedures used to perform a cutting test.

Cutting Tests. The prescribed procedure for establishing retail prices for processed meats, meat products, and poultry is to predetermine the average yield for each cut in relation to the average weight of the wholesale article or carcass, taking into consideration the waste, bones, fat, and shrinkage. Shrinkage is a varying percentage of unavoidable loss. It is caused by normal evaporation of moisture and drainage during storage, cutting, display, and rewraps. Therefore, an initial markup of 1½ to 2 percent is required to cover these losses.

AF Form 400. You will use AF Form 400, Processed Item Test (fig. 7-3), to record all cutting tests. Refer to figure 7-3 as we discuss the procedures for conducting a cutting or process item test. The items shown on this form are only a small portion of a carcass, and are provided only as an example for you to follow. LA real Processed Item Test form would list all cuts of meat and cover several pages.

Block 1. The description of the wholesale article being tested.

Block 2. Tag weight—This is the weight recorded at the time of delivery.

Block 3. Price per pound—Is noted from the invoice when the item is received.

Block 4. Cost of item—Is derived by taking the weight of the item, multiplied by the price per pound. (block 2 × 3 = cost of item.)

Column A. Description—Enter the names of the retail cuts to be processed. Establish a sequence. When entering fat, bone, and suet, enter the contract price and the 90 percent notation. The defense property disposal office (DPDO) returns 90 percent of the monthly proceeds they receive from the sale of suet, bones, fat, and meat trimmings. enter the total saleable yield and over-the-counter price. *Column B.* Enter the weights of each processed item in column A. Record this from the automatic computing scale and labeling machine. Enter the weight in pounds and hundredths of ounces. Include also the weight of fat, bone, and suet. Total these weights. This total should be less than the tag weight you started with.

In order to figure out the weight of saleable yield, you must subtract the weight of fat, bone, and suet in column A from the weight of processed items in column B.

Block 5. Shrinkage—The difference between the total weight in column B and the tag weight in block 2 is considered shrinkage (unavoidable loss). Enter this weight in block 5.

Column C. Percent of Yield—Compute and enter in column C the percentage of yield for each retail cut, computed to the weight of the carcass or wholesale cut from which they were processed. Refer to the first processed item in figure 7-3. There are 23.09 pounds of beef loin sirloin

PROCESSED ITEM TEST				1. DESCRIPTION: BEEF CARCASS USDA CHOICE YIELD 3 OR BETTER				
2. TAG WEIGHT: 631		3. PRICE PER LB: $1.07				4. VALUE OF ITEM (2 × 3): $675.17		
DESCRIPTION - PROCESSED ITEM	WEIGHT		NORMAL % PREVIOUS TEST	ACTUAL (B ÷ 2)	CURRENT PRICE	$ VALUE (B × D)	NEW PRICE	$ VALUE (B × F)
A	LBS.	OZ.			D	E	F	G
1 BEEF LOIN SIRLOIN STEAK	23	09		3.66	1.91	44.10	1.98	45.72
2 BEEF LOIN SIRLOIN PIN BONE STEAK	6	75		1.07	1.11	7.49	1.18	7.97
3 BEEF LOIN TOP SIRLOIN	2	71		.43	2.15	5.83	2.22	6.02
4 BEEF LOIN TOP LOIN STEAK	3	60		.57	2.01	7.24	2.08	7.49
5 BEEF LOIN T-BONE STEAK	22	40		3.55	2.45	54.88	2.52	56.45
6 BEEF LOIN PORTERHOUSE STK	9	15		1.45	2.50	22.88	2.57	23.52
7 BEEF ROUND STEAK	39	63		6.28	1.83	72.52	1.90	75.30
8 BEEF ROUND SWISS STEAK	4	54		.72	1.73	7.85	1.80	8.17
9 BEEF ROUND TOP ROUND STK	5	36		.85	1.83	9.81	1.90	10.18
10 BEEF ROUND TIP ROAST	20	26		3.21	2.01	40.72	2.08	42.14
11								
12 TOTAL SALEABLE YIELD	415	26		65.81				
13								
14 BONES, FAT, SUET 11.04 OF 90%	205	14		32.51	.09.94	20.39		20.39
15								
16 OVER THE COUNTER PRICE					1.59		1.66	
17								
18								
19								
20								
TOTALS	620	40		98.32		658.95		689.28

5. SHRINKAGE (2 - Total Col B)	6. % SHRINKAGE (5 ÷ 2)	7. LOSS (E - 4) (4 - 1)	8. GAIN (4 - E) (4 - 1)
10.60	1.68	16.22	14.11
		LOSS (E - 4) (4 - E = 4) 2.40	% GAIN (4 - E) (4 - E = 4) 2.09

DATE	TEST CONDUCTED BY:	RESULTS COMPUTED BY:	TEST APPROVED BY:

NOTE: Any significant variation between normal yield % and actual yield % must be explained on back of form.

Figure 7-3. Sample of Air Force Form 400.

steak. This 23.09 is divided by the weight of the wholesale article, 631 pounds. For example, 23.09 divided by 631 equals 366. Use this same formula to figure the percentages for all items in column A, figure 7-3, including the total saleable yield (415 – 631 = 65.81) and bones, fat, and suet (205.14 – 631 = 32.51). Once you have finished, add these figures together and enter the total in column C. This figure should be slightly less than 100 percent.

Column D. Current Price—This is the price at which the retail cut is being sold at the time the cutting test is performed. You can get this price from the meat department office. Remember, the price we realize from the sale of fat, bone, and suet is 90 percent of the contract price. Suppose the contract price is 11.04 as shown on the form. Multiply this figure by 90 percent to get the current price of the fat, bone, and suet (i.e., 11.04 × .90 = .0994 per pound). Place this in column D.

Column E. Value—In order to get the value of each retail cut (if the computer scale isn't being used) multiply the weight of each item by the current price (23.09 × 1.91 = 44.10). After this has been completed, add the values and enter the total in the section provided.

Block 6. Percent of Shrinkage—You can get percentage of shrinkage by dividing the shrinkage in block 5 by the tag weight in block 2 (10.60 ÷ 631 = 1.68).

Block 7. Gain or Loss—The total value of the processed items compared to the cost of the wholesale articles determines the profit or loss of the cutting test. If the total in column E is greater than block 4, you are working at a gain (E – 4 = gain). If the total in column E is less than block 4, then you are working at a loss. Enter this figure at the top of block 7 and cross out the appropriate word (gain or loss). Derive the percentage of gain or loss (the bottom of block 7) by dividing the gain or loss by the total cost of the item (16.22 ÷ by 675.17 = 2.4).

Then adjust the prices of the processed items to show the 1½- to 2-percent gain to cover losses. In order to figure the total return value of 1½ to 2 percent, you must multiply the cost of the item by the percent (675.17 × 1.02 = 688.67). This figure is the *true value* that must be returned after processing. (You will not enter this figure on this form.)

Working with this new true-value figure, you can determine whether your prices need to be adjusted up or down. Do this by finding the difference between your true-value figure and your total value (688.67 - 658.95 = 29.72). This figure is the amount you need to increase or decrease in order to reach your true-value figure. Then divide this figure by the saleable yield. You may adjust the amount now shown either up or down, depending on whether you need to make or lose money. (Again, this figure will not be entered on the form.)

Column F. Adjusted Prices—These are the new prices at which you will be selling the retail cuts after having adjusted cost of each item.

Column G. Value—Multiply the weight of each processed item by the adjusted price of each item (Column E × Column F = Column G).

Block 8. Determine the adjusted gain by subtracting cost of the item from the total value; (i.e., 689.28 – 675.17 = 14.11). Enter in top of block 8. To determine the percent of gain, divide the gain by the cost of item. This will give you the adjusted percent; (i.e., 14.11 ÷ 675.17 = 2.09). Enter this in the bottom of block 8.

Over-the-Counter Price. This is the average price that the patron pays for the product. You have two different figures to obtain here. You get the over-the-counter price for current price by dividing the total value in column E by the total saleable yield (i.e., 658.95 ÷ 415.26 = 1.59). (See fig. 7-3.) You divide the total value in column G by the total saleable yield to get the over-the-counter price for the adjusted price (i.e., 689.28 ÷ 415.26 = 1.66).

The store manager must approve all cutting tests.

Frequency. Cutting tests must be conducted at least once a month, when significant changes occur in weight ranges, or when the style or method of cutting is changed for merchandising reasons. The results of the analysis of the cutting test will dictate the necessity of other cutting tests. The consistency of the meatcutters in cutting up carcasses also will have a bearing on the frequency of tests.

Consistency. When conducting cutting tests, it is important that the same method of cutting and trimming be used to secure average yields of meat cuts. A uniform trim also insures the patron a true value of the product. This technique increases eye appeal and creates uniform movement. Tests on various carcass weights depend upon weight ranges used, grade, conformation, bone structure, and trim.

Accumulation. In order to set up average weights of resale cuts, your meat department will accumulate cutting test results indefinitely. Each time you use the accumulated results as a pricing tool, the figures become more valuable. From accumulated cutting tests, you can determine the percent yield of each cut. This percentage, when applied to a given weight of a carcass, side, or wholesale cut, indicates the average weights of the resale meat cuts. The percentage of yield for resale cuts will remain the same as long as the method of cutting is not changed and quality (grades) remains constant.

Meat types. Record on AF Form 400 the cutting tests for all types of meat that requires processing. A separate folder for each type (beef, pork, veal, lamb, and ham) is maintained in the meat department. Keep each form for 6 months.

Special cuts. Although we must have consistent cutting tests, using the same method of cutting as we have discussed previously, that does not prohibit our occasional deviation for special orders. Meatcutters process special thickness and special cuts for customers. To enhance customer service, you and other meatcutters will also slice canned hams and tenderize meat cuts as requested. Freezer orders for sides or quarters of beef may be processed on an optional basis, but your first priority is maintaining the best possible meat selection in the display cases.

Pricing Charts. The pricing guide formats (fig. 7-4) assists the meat department manager in establishing retail prices for processed meat items. Selling prices, as listed on the charts, are merely an example, and these are not to be interpreted as actual prices to be used. Determination of selling prices results from several different factors, such as patron demand, variations in yield, and the results of AF Form 603, Record of Operation.

AFCOMS BEEF PRICING GUIDE CARCASS COST PER POUND

RETAIL CUTS	1.03		1.04		1.05		1.06	1.07	1.08		1.09		1.10		1.11		1.12	
	MIN	MAX	MIN	MAX	MIN	MAX	SUGGESTED RESALE PRICE		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
PORTERHOUSE	2.13	2.43	2.15	2.45	2.17	2.47	2.19 2.49	2.21 2.51	2.23	2.53	2.25	2.55	2.27	2.57	2.29	2.59	2.31	2.61
T-BONE STK	2.07	2.37	2.09	2.39	2.11	2.41	2.13 2.43	2.15 2.45	2.17	2.47	2.19	2.49	2.21	2.51	2.23	2.53	2.25	2.55
SIRLOIN STK	2.03	2.33	2.05	2.35	2.07	2.37	2.09 2.39	2.11 2.41	2.13	2.43	2.15	2.45	2.17	2.47	2.19	2.49	2.21	2.51
TOP LOIN STK	2.15	2.45	2.17	2.47	2.19	2.49	2.21 2.51	2.23 2.53	2.25	2.55	2.27	2.57	2.29	2.59	2.31	2.61	2.33	2.63
ROUND STK	1.93	2.23	1.95	2.25	1.97	2.27	1.99 2.29	2.01 2.31	2.03	2.33	2.05	2.35	2.07	2.37	2.09	2.39	2.11	2.41
TOP ROUND STEAK	1.99	2.29	2.01	2.31	2.03	2.33	2.05 2.35	2.07 2.37	2.09	2.39	2.11	2.41	2.13	2.43	2.15	2.45	2.17	2.47
BOTTOM ROUND STEAK	1.91	2.21	1.93	2.23	1.95	2.25	1.97 2.27	1.99 2.29	2.01	2.31	2.03	2.33	2.05	2.35	2.07	2.37	2.09	2.39
TIP STK	1.99	2.29	2.01	2.31	2.03	2.33	2.05 2.35	2.07 2.37	2.09	2.39	2.11	2.41	2.13	2.43	2.15	2.45	2.17	2.47
CHUCK BLADE STEAK	1.05	1.35	1.06	1.36	1.07	1.37	1.08 1.38	1.09 1.39	1.10	1.40	1.11	1.41	1.12	1.42	1.13	1.43	1.14	1.44
CHUCK 7 BONE STEAK	1.09	1.39	1.10	1.40	1.11	1.41	1.12 1.42	1.13 1.43	1.14	1.44	1.15	1.45	1.16	1.46	1.17	1.47	1.18	1.48
CUBE STK	1.97	2.27	1.99	2.29	2.01	2.31	2.03 2.33	2.05 2.35	2.07	2.37	2.09	2.39	2.11	2.41	2.13	2.43	2.15	2.45
FLANK STK	1.95	2.25	1.97	2.27	1.99	2.29	2.01 2.31	2.03 2.33	2.05	2.35	2.07	2.37	2.09	2.39	2.11	2.41	2.13	2.43
RIB STK	1.91	2.21	1.93	2.23	1.95	2.25	1.97 2.27	1.99 2.29	2.01	2.31	2.03	2.33	2.05	2.35	2.07	2.37	2.09	2.39
TOP ROUND ROAST	1.91	2.21	1.93	2.23	1.95	2.25	1.97 2.27	1.99 2.29	2.01	2.31	2.03	2.33	2.05	2.35	2.07	2.37	2.09	2.39
BOTTOM ROUND ROAST	1.89	2.19	1.91	2.21	1.93	2.23	1.95 2.25	1.97 2.27	1.99	2.29	2.01	2.31	2.03	2.33	2.05	2.35	2.07	2.37
TIP ROAST	1.97	2.27	1.99	2.29	2.01	2.31	2.03 2.33	2.05 2.35	2.07	2.37	2.09	2.39	2.11	2.41	2.13	2.43	2.15	2.45
RIB ROAST	1.89	2.19	1.91	2.21	1.93	2.23	1.95 2.25	1.97 2.27	1.99	2.29	2.01	2.31	2.03	2.33	2.05	2.35	2.07	2.37
CHUCK BLADE ROAST	95	1.25	96	1.26	97	1.27	98 1.28	99 1.29	1.00	1.30	1.01	1.31	1.02	1.32	1.03	1.33	1.04	1.34
CHUCK 7-BONE ROAST	1.15	1.45	1.16	1.46	1.17	1.47	1.18 1.48	1.19 1.49	1.20	1.50	1.21	1.51	1.22	1.52	1.23	1.53	1.23	1.54
CHUCK ARM ROAST	1.17	1.47	1.18	1.48	1.19	1.49	1.20 1.50	1.21 1.51	1.22	1.52	1.23	1.53	1.24	1.54	1.25	1.55	1.26	1.56
EYE ROUND ROAST	2.07	2.37	2.09	2.39	2.11	2.41	2.13 2.43	2.15 2.45	2.17	2.47	2.19	2.49	2.21	2.51	2.23	2.53	2.25	2.55
SHORT RIBS	85	1.15	86	1.16	87	1.17	88 1.18	89 1.19	90	1.20	91	1.21	92	1.22	93	1.23	94	1.24
STEW MEAT	1.15	1.45	1.16	1.46	1.17	1.47	1.18 1.48	1.19 1.49	1.20	1.50	1.21	1.51	1.22	1.52	1.23	1.53	1.24	1.54
GROUND BEEF 75%	1.01	1.31	1.02	1.32	1.03	1.33	1.04 1.34	1.05 1.35	1.06	1.36	1.07	1.37	1.08	1.38	1.09	1.39	1.10	1.40
GROUND BEEF 82%	1.29	1.59	1.30	1.60	1.31	1.61	1.32 1.62	1.33 1.63	1.34	1.64	1.35	1.65	1.36	1.66	1.37	1.67	1.38	1.68

NOTE MAXIMUM AND MINIMUM PRICES OF SEASONALLY HIGH AND OR LOW DEMAND ITEMS MAY BE ADJUSTED BY 20% TO ALLOW FOR ORDERLY MOVEMENT OF BEEF CARCASSES

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Figure 7–4. AFCOMS beef pricing chart

SECTION III–INVENTORY

ITEM	QTY.	PRICE	AMOUNT		ITEM	QTY.	PRICE	AMOUNT	
CHEESE, AMER, LB.	18½	.65	12	02	BROUGHT FORWARD			7237	55
CHEESE, SWISS, LB.	3	.67	2	01					
BACON, SLAB, LB.	128	.60	76	80					
BACON (LEAN), SLAB LB	15	.62	9	30					
HAM, COOKED, LB.	218	.80	174	40					
HAM, COOKED, (SLI), LB.	106	.85	90	10					
BEEF CARCASS, LB.	7845	.70	5491	50					
HAM, FRESH, LB.	240	.53	127	20					
HAM, FRESH, SHANK, LB	77	.47	36	19					
HAM, SMOKED, LB.	197½	.49	96	65					
PORK, BOSTON BUTT, LB	38	.49	18	62					
VEAL, SIDES, LB.	228	.90	205	20					
BEEF LIVER, LB.	18	.67	12	06					
PORK, LOIN, LB.	500	.77	385	00					
PROCESSED MEATS			500	50					
CARRIED FORWARD			7237	55	TOTAL			7237	55

07996

Figure 7–5. Sample of Air Force Form 603 (reverse).

RECORD OF OPERATION	DEPARTMENT PRODUCE MEAT	FROM (DATE)	TO (DATA)

I. SALES RECORD			
MONDAY	CASH	1 315	50
	CHARGE		
TUESDAY	CASH	1 396	12
	CHARGE	144	03
WEDNESDAY	CASH	1 179	29
	CHARGE		
THURSDAY	CASH	1 412	89
	CHARGE	182	91
FRIDAY	CASH	1 130	35
	CHARGE		
SATURDAY	CASH	1 137	01
	CHARGE		
CREDIT (TURN IN AND TRANSFER OUT)		17	00
MONDAY	CASH	1 147	35
	CHARGE		
TUESDAY	CASH	1 323	52
	CHARGE	167	59
WEDNESDAY	CASH	1 188	62
	CHARGE		
THURSDAY	CASH	1 331	33
	CHARGE	159	29
FRIDAY	CASH	1 399	21
	CHARGE		
SATURDAY	CASH	1 177	82
	CHARGE		
CREDIT (TURN IN AND TRANSFER OUT)			
TOTAL		18 778	83

II. RECEIPTS				
SOURCE			AMOUNT	
OPENING INVENTORY (FROM LINE 3 SEC IV PREVIOUS REPORT)			7 867	07
SUBS SUBSECTION 5 DEC			1 480	00
SWIFT & CO 6 DEC			3 547	10
SUBS SUBSECTION 7 DEC			2 890	15
SUBS 8 DEC			1 433	05
ARMOUR & CO 11 DEC			2 372	16
SUBS SUBSECTION 12 DEC			1 129	18
HORMAL & CO 13 DEC			1 490	32
SUBS SUBSECTION 14 DEC			1 119	10
TOTAL			23 028	13
INVENTORY (SEE REVERSE)				
RESULTS				
1 TOTAL SALES (FROM SECTION I)			15 775	83
2 TOTAL RECEIPTS (FROM SECTION II)	23 028	13		
3 TOTAL INVENTORY (FROM SECTION III)	7 237	55		
4 VALUE OF ITEMS SOLD (LINE 2 LINE 3)			15 790	58
5 GAIN OR LOSS (DIFFERENCE BETWEEN LINE 1 AND LINE 4)			(14	75)
6 PERCENTAGE GAIN OR LOSS (LINE 5 LINE 1)	LOSS 0935% FOR			
7 6 MONTH PERIOD TO DATE CUMULATIVE GAIN OR LOSS			$ 34	49
8 6 MONTH PERIOD TO DATE CURRENT PERIOD TO DATE			% 018	

Figure 7-6. Sample of Air Force Form 603 (front).

Using of pricing charts does not eliminate the requirement for cutting tests. Meats are procured in the types, weight ranges, and grades shown in the pricing charts.

Exercises (053):

1. What is the purpose of cutting tests?

2. What is the number and name of the form used to conduct cutting tests?

3. In conducting cutting tests, where do you obtain the price per pound?

4. How do you figure out the weight of the saleable yield?

5. Who must approve all cutting tests?

6. How often must cutting tests be conducted?

7. What is the purpose of a pricing chart?

054. Cite the factors and procedures used to perform fat percentage tests.

Fat Percentage Tests. To insure that ground meats do not exceed the allowable fat percentage, fat tests are performed during each processing day. The veterinarian also performs similar tests periodically to verify the commissary tests.

Allowable percentage of fat. Label ground beef with fat content ranging from 19 to 25 percent as "ground beef not less than 75 percent lean." This labeled ground beef will never exceed 25-percent-fat content. Label ground beef containing 18 percent or less fat (derived from lean trimmings) as "ground beef not less than 82 percent lean."

Equipment. The fat-measuring kit is contained in a carrying case consisting of two funnels, three test tubes, a calibrated scale with movable pointer, two cleaning brushes, a power cord with plug, and a heater.

Operation. Insert a sample of ground meat, weighing .125* pound, under the heating element. Turn on the machine for a 15-minute interval (the machine may be unattended during this period); fat will be rendered from the sample. You will use both a calibrated scale and a movable pointer, located next to the test tube, to measure the percentage of fat that has dripped into the test tube. After each testing, thoroughly wash the funnels, test tubes, and screen.

Exercises (054):

1. Why do you perform fat-percentage tests?

2. What is the maximum amount of fat content allowable in ground beef?

3. How much ground meat is used to conduct a fast test?

4. How long must the machine be turned on to get a fat sample?

055. Cite the types of meat department inventories and explain specific procedures used in taking each type; state the factors used to price retail meat cuts.

Meat Department Inventory. The purpose of the meat department inventory is to determine the exact financial condition of the meat department. The inventory will assist in determining consumption factors and requirements and adjusting gains or losses by setting up selling prices. The types of inventories used in the meat department are the semiannual and semimonthly inventories. Inventories can be taken on a more frequent schedule if required. A management inventory is taken when there is a change in accountability or when directed by HQ AFCOMS. Inventory procedures are the same as for the semiannual inventory.

Operating instructions (OI). Commissary management publishes a detailed OI for meat department inventory. The OI outlines specific procedures for meat department employees in conducting the inventory.

Semiannual Formal Inventory. A physical inventory is taken as of the close of business on the last working day of February and August. AF Form 603, Record of Operation, is used for inventory (fig. 7-5). The form is overprinted with the nomenclature of items to facilitate the inventory. Commissary management appoints two distinct teams to perform two separate inventories and insure that all count differences are reconciled. All inventory entries are recorded in ink.

Inventory procedures. Items processed and packaged in the meat department are inventoried at the sale price indicated on each individual package. Indicate items so

* hundredths of a

inventoried as a single-line entry on the inventory form; for example, processed meats—$157.30. These items are not subject to an inventory price adjustment in the succeeding month. Set the price of fat, suet, and bones which have not been disposed of before the inventory at 90 percent of the established contract price. This is indicated on the form as a single-line item entry in the same manner as prescribed for processed items. Inventory vendor packaged merchandise by *item at the selling Vendor packaged merchandise is* inventoried by item at the selling price in effect on the last day of sale prior to inventory. Invoice costs must be recouped when two more lots procured at different prices are on hand. Items awaiting processing are inventoried at the exact invoice cost.

Other Inventories. A semimonthly inventory is taken on the Saturday closest to the 15th of the month and the last sales day of the calendar month. This inventory determines that the established retail prices are not resulting in excessive profits or a loss. Persons taking the counts, recording, and making extensions must sign the inventory forms. Additionally, the meat department manager and store manager will sign to attest to the correctness of the inventory. You will use AF Form 603 to accomplish all inventories. The semimonthly inventory may be taken using dollar inventory procedures to the extent feasible. A copy of the inventory is kept for 6 months. If the inventory results in excessive gains or a loss, the commissary officer attaches an explanation and a statement of corrective action.

Record of Operation. After the physical count, recording, and extensions are done, complete the front of AF Form 603. This is the actual sales record, listing the operating gains or losses for the meat department. Refer to figure 7-6 as we discuss this form. Section I lists cash and/or charge sales for each day of the two-week period and then totals the sales. Section II lists the opening inventory and receipts for this period.

Section IV. Enter the total sales from section I in block 1 of section IV. Enter the total receipts from section II in block 2. Take the total inventory from the reverse side of the form (section III) and enter in block 3. To get the value of the items sold, subtract the total inventory from the total receipts and place in block 4. The gain or loss is the difference between block I and block 4. List the gain or loss in block 5. In this case, we see a loss of $14.75. Find the percentage of loss by dividing the loss by the total sales. In block 7, we enter the cumulative gain or loss for the six-month period to date. List the percentage in block 8.

A gain or loss of up to 3 percent of sales for the evaluation period is permitted (evaluation period is the period since last inventory, usually 15 days). This variance is authorized to permit flexibility while recovering losses or decreasing gains during subsequent evaluation periods. It is not an authorization for the meat department to operate at a gain or loss. An operating gain or loss of ~~4 tenth of 1~~ percent is authorized on the semiannual inventory. Control section personnel tabulate the results on the AF Form 603 and forward the results to store and complex management personnel prior to the next duty day.

Rework file. All losses resulting from damage or deterioration are supported from the initial markup. Normal losses resulting from deterioration and items processed to other retail saleable items are recorded on AF Form 2365, Rework File. The store manager or a designated representative initials all individual entries in excess of $20. The rework file is attached to the AF Form 603 for the accounting period.

Pricing Meat Items. Selling prices of processed meat items are set at a level to recoup invoice costs. Prices for processed items are based on cutting tests, analysis of operation, standard commercial prices for comparable items, and customer demand. Exercise care to prevent wide fluctuations in selling prices. The meat department manager must obtain approval from the store manager prior to adjusting prices.

Factors on Pricing Cuts. Based on the yield, the following factors are considered when establishing the price of each cut:

a. Prevailing commercial prices.
b. Season and approaching holidays.
c. Demand for steaks and ground meat.
d. Demand for roast on holidays.

Exercises (055):

1. What are the two types of inventories taken in meat departments?

2. When should each of the inventories be performed?

3. What method is used to inventory processed meats?

4. Why are variances authorized in the meat department's gains or losses?

5. Who must initial entries in excess of $20 on AF Form 2365, Rework File?

6. List the factors to be considered in pricing retail cuts.

7-4. Inspections and Evaluations

One of the supervisor's major duties is the evaluation of their department's operation. At this time you should receive self-satisfaction of a job well done. The supervisor accomplishes this duty by careful and thorough inspection of all phases of the meat department operation. How customer complaints are resolved are of the utmost importance.

056. List the areas of inspection within the meat department; and cite the responsibilities of meat department personnel towards inspecting the meat department.

Inspections. The meat department manager directs the meat department operation, plans for improvements, and insures that improved methods and procedures are placed in effect and followed. For proper meat department operation, the manager must continuously inspect all phases of the operation. Otherwise, he or she could not detect procedures or conditions that need improvement. The manager's duties also include inspecting meat and supplies for quantity and condition and inspecting the entire meat processing procedure: meatcutting, wrapping, pricing, and displaying. The supervisor insures that early morning breaking crews break a full day's supply of carcass beef into primal or subprimal cuts for processing into retail cuts. He or she plans for preparation of at least 50 percent of the daily requirements prior to the time it is needed. Preparation of this type is essential to insure a complete supply of retail cuts is available for display at all times.

Substandard conditions. Whenever you notice procedures or conditions that can be improved, notify your supervisor. If he/she thinks more space will help, they will take action to secure more space, additional tables and equipment, or whatever is necessary to make work safer and more efficient. Stay alert to possible hazards. Your supervisor will call in specialists, as needed, to correct such conditions as defective electrical appliances, refrigeration equipment, etc. Meatcutters are not allowed to make major repairs to such equipment. Have your subordinates report substandard conditions that your supervisor may not know about.

Exercises (056):

1. List the areas of inspection within the meat department.

2. How often must the meat department manager inspect all phases of the operation?

3. How much of the daily meat requirements must be prepared prior to the time it is needed?

4. What individual is responsible for getting additional equipment when it is needed?

057. Cite the factors to be analyzed in evaluating the effectiveness of the meat department operation.

Operations Evaluation. The supervisor evaluates the effectiveness of the meat department operation by analyzing four factors: customer complaints, production charts, reports, and accounting records. Each has a separate meaning. All of them combined tell how efficiently the department is operating.

Exercises (057):

1. What are the factors to be analyzed in evaluating the effectiveness of the meat department operation?

2. Which of these factors tell how efficiently the meat department is operating?

058. Cite the correct procedures to use when resolving customer complaints.

Resolving Customer Problems. No problems are more delicate than that of resolving customer complaints. What you say and how, and your manner toward customers determines whether you resolve customer problems or whether you have a more difficult time. According to industrial studies, human relations have a greater influence on a person's success than any other single factor. Some days will be more difficult than others, and customers will complain. Suppose one says that he or she got a tough cut of meat. Should you suggest that the meat was not prepared properly? No, this would likely add fuel to the flames. Should you defend your meat as "only the very best"? This, too, is likely to further upset the customer and put him or her on the defensive. Probably the best solution is to listen carefully to what is said and then ask how you can serve them now. You will always gain by being considerate of people and by listening to their side of the story. This does not mean that supervisors or meatcutters should take abuse and insult. But very few people will furnish such abuse in the face of courtesy and consideration.

Exercises (058):

1. What is the correct procedure to use when customers complain?

2. Place the letter "T" in front of correct statements and an "F" for those that are false.

____ a. According to industrial studies, human relations have a greater influence on a person's success then any other single factor.

____ b. If customers complain that they got a tough cut of meat, you should tell them that they didn't prepare it properly.

____ c. Defending your meat as "only the very best" will likely further upset customers and put them on the defensive.

____ d. For good relations, meatcutters should take any abuse or insult inflicted by a customer.

059. Specify the purpose of the USAF Graduate Evaluation Program.

Reasons for the Program. The Graduate Evaluation Program is a major aid in the quality control of formal and career development courses and serves as a source of information to determine the following:

a. Ability of recent graduates to perform their assigned tasks to the level of proficiency specified in the applicable specialty training standard.

b. Extent to which recent graduates use their acquired skills.

c. Extent to which recent graduates retain the knowledge they attained.

d. Need to revise the approved specialty training standard, formal or career development course in order to improve training effectiveness and responsiveness to the requirements of the using commands.

e. Need for further evaluation of training problems identified by the evaluation of graduates.

Exercises (059):

1. Some of the following statements about what is determined, using the USAF Graduate Evaluation Program as a source, are valid; some, invalid. Write V for those valid and IV for those invalid:

____ a. The extent to which recent graduates use their acquired skills.

____ b. The need for further evaluation of training problems identified by the comments of graduates submitted voluntarily.

____ c. The ability of recent graduates to perform their assigned tasks to the level of proficiency specified in the applicable training standard.

____ d. The extent to which knowledge attained by recent graduates is used by them for innovative problem solving on the job.

____ e. The need to revise the approved specialty training standard, formal, or career development course in order to improve training effectiveness and responsiveness to the requirements of the using commands.

ANSWERS FOR EXERCISES

CHAPTER 1

Reference:

001 – 1. (1) a.
(2) f.
(3) e.
(4) c.
(5) d.
(6) b.

002 – 1. You must satisfactorily perform in the 5-skill-level position for 6 months or more, successfully complete this course, and be recommended for upgrading by your supervisor.

002 – 2. Your own efforts.

003 – 1. The specialty summary section, the duties and responsibilities section, and the specialty qualifications section.

003 – 2. AFSCs 61210, 61230, 61250.

003 – 3. (1) e, g.
(2) a, b, c.

003 – 4. E–3 through E–5.

003 – 5. Knowledge of types, grades, and cuts of meats; fundamentals of merchandising and marketing; and property and monetary accounting.

004 – 1. AFCOMSR 145-2.

004 – 2. AFCOMSR 145-2, Chapter 4, Section C.

004 – 3. 4-45, 4-49.

004 – 4. 4-46, 4-56.

004 – 5. 4-46, 4-57.

CHAPTER 2

005 – 1. (1) c.
(2) d.
(3) e.
(4) a.
(5) g.
(6) b.
(7) f.
(8) h.
(9) h.

006 – 1. Hopper, feed tray, worm, grinder plate, and knife.

006 – 2. A safety interlock switch.

006 – 3. The end slice plate.

006 – 4. Remove all bones and cut it into thin strips.

006 – 5. Adjust the meat gauge plate to the desired thickness.

007 – 1. F. Carcass beef is received through the storage room door.

007 – 2. T.

007 – 3. F. Located in the wrapping room.

007 – 4. T.

008 – 1. Intended purpose.

008 – 2. Metal mesh gloves, safety aprons, hardhats, and safety shoes.

008 – 3. Away.

008 – 4. Knife pouch or storage rack.

008 – 5. Hooks.

008 – 6. Guards, and guides.

008 – 7. Safety interlock switches.

008 – 8. Metal mesh gloves.

008 – 9. Faulty or exposed; firmly secured; covers.

008 – 10. Alarms and fire axes.

008 – 11. Legs.

009 – 1. 140° F.

009 – 2. Meat and fat accumulates in cracks and crevices and breed bacteria growth.

009 – 3. Always clean and sanitize for reuse, if machine is used for processing beef.

009 – 4. Weekly.

009 – 5. At the close of each business day. Thoroughly clean the cutting tables with hot water, an approved detergent, and a stiff, clean bristle brush.

010 – 1. Cleanliness and grooming, clean clothing, protecting your health.

010 – 2. Because you must work in temperatures of 0° to 50°.

011 – 1. Processing area, equipment, display cases, storage areas, personnel, meat on display, food handlers' cards, meat.

011 – 2. To inspect the condition and proper temperature of the meat.

CHAPTER 3

012 – 1. In checkers designated in writing by the store manager.

012 – 2. Three.

012 – 3. DPSC.

012 – 4. 100 percent.

012 – 5. Their net weight.

013 – 1. Allow ample space to permit proper air circulation.

013 – 2. In stacks 2 inches from the floor, 4 to 6 inches from the walls, and a minimum of 24 inches from the ceiling.

013 – 3. In crushed ice containers with drains to the outside.

013 – 4. Temper frozen beef in a chill box at 32° to 35° F. to an internal temperature of 28° to 30° F. Process and sell the beef chilled. Inform customers that the beef has been frozen before.

015 – 1. (1) e.
(2) c.
(3) a.
(4) f.
(5) d.
(6) b.

015 – 2. Recorded on temperature charts, posted on the outside of the walk-in boxes. They are checked twice daily, at the beginning and the end of the day.

014 – 1. Pull.

014 – 2. Quality assurance.

014 – 3. Dates of pack.

014 – 4. Feb 17.

014 – 5. Alphanumerical.

014 – 6. Mar 20.

014 – 7. Pull date.

016 – 1. (1) b.
(2) a.
(3) a.
(4) c.
(5) b.

016 – 2. (1) The type of cure; (2) the length of the smoking period, and (3) the method of packaging.

016 – 3. Vinegar and salt water.

017 – 1. A current DD Form 577.

017 – 2. The store administrative clerk.

017 – 3. Copy 3.

017 – 4. The original and duplicate.

CHAPTER 4

018 – 1. (1) c.
(2) b.
(3) d.
(4) a.

018 – 2. Any five of the following eight.
a. Loins.
b. Spareribs.
c. Hams.
d. Boston butts.
e. Bacon.
f. Shoulders.

122

g. Picnics.
h. Fatback.

019 – 1. (1) c.
(2) e.
(3) d.
(4) a.
(5) f.
(6) b.

020 – 1. (1) c, d.
(2) c, d.
(3) f.
(4) g.
(5) a.
(6) e.
(7) b, d.

020 – 2. (1) c, d, e, g.
(2) a, f.
(3) a, b, h.
(4) a.
(5) a, b, c.
(6) a, b, c.
(7) d.

021 – 1. a. T.
b. F. Change "all fat" to "excess fat."
c. F. Leave the gland on the tip.
d. F. Change "above" to "below."

021 – 2. Locate the natural seam and follow the contour of the round, cutting in a straight line in front of the kidney knob, perpendicular to the backbone down to the 13th rib.

021 – 3. The third sacral vertebra and the rump knucklebone.

022 – 1. Flank.
022 – 2. Sirloin tip.
022 – 3. Bone-in round.
022 – 4. Heel of round.
022 – 5. As pot roast, stew beef, or ground beef.
022 – 6. Sirloin tip, bottom round.
022 – 7. Beef round bottom round rump roast, eye of round roast, bottom round roast, bottom round steak, cube steak, stew beef, and ground beef.
022 – 8. Hipbone.
022 – 9. Remove the excess chine bone.
022 – 10. Sirloin, pinbone, porterhouse, T-bone, and top loin steaks.
022 – 11. Porterhouse.
022 – 12. Top loin.
022 – 13. b.
e.
d.
g.
a.
f.
c.

023 – 1. T.
023 – 2. Fourth and fifth rib.
023 – 3. F. Change "5 inches from the chine bone" to "2 inches from rib eye."
023 – 4. F. Delete short ribs.
023 – 5. T.
023 – 6. a, b, d, g, h.
023 – 7. Top loin steak, rib roast, rib steak, rib eye steak, and back ribs.
023 – 8. (1) Remove the backbone, the featherbones, and the backstrap.
(2) Place a thin (1/4 inch) layer of fat where bones have been removed. This will prevent excess shrinkage in cooking and facilitate carving.
(3) Tie the fat into place.
023 – 9. Boneless rib roast (either flat or rolled), boneless rib steak, or rib eye roast.

024 – 1. 1/2.
024 – 2. Chuck; shoulder.
024 – 3. Blade.
024 – 4. d.
a.
c.
b.
a. Remove the foreshank and brisket from the crosscut chuck.
b. Separate the foreshank from the brisket and merchandise.
c. Separate the chuck from the shoulder and merchandise.

024 – 6. a. Locate the blade cartilage in the force of the chuck and mark approximately 1 inch on the arm side.
b. Locate the ball portion of the ball-and-socket joint of the arm on the neck end and mark 1/2 inch from the ball on the chuck side.
c. Connect the two marks and cut parallel with the back of chuck to complete the separation.

024 – 7. Beef chuck arm pot roast; beef soupbone with meat; beef chuck shoulder pot roast, boneless; beef chuck arm pot roast; and beef chuck flanken style rib.

025 – 1. F. Leave 1/2 inch of exterior fat.
025 – 2. T.
025 – 3. F. Between the fifth and sixth rib.
025 – 4. F. Round and sirloin tip are packed together.
024 – 5. a. Short loin.
b. Armbone chuck.
c. Blade chuck.
d. Shoulder.

026 – 1. (1) b.
(2) b.
(3) a.
(4) a.
(5) a.
(6) b.
(7) a.
(8) b.

027 – 1. (1) d.
(2) a.
(3) c.
(4) b.
(5) e.

028 – 1. (1) c.
(2) d.
(3) a.
(4) b.

029 – 1. T.
029 – 2. F. They are not split lengthwise into sides.
029 – 3. T.
030 – 1. F. Leave all ribs on the foresaddle.
030 – 2. F. Separate the ribs from the shoulder between the sixth and seventh ribs.
030 – 3. F. French lamb chops are processed from the rib.
030 – 4. T.
030 – 5. T.
030 – 6. F. Remove the two-rib corner.
030 – 7. T.
030 – 8. F. Cut immediately in front of the hipbone on loin end.
030 – 9. T.

031 – 1. Twelve pounds and under.
031 – 2. Over 12 pounds.
031 – 3. Over 12 pounds.
031 – 4. Twelve pounds and under.
031 – 5. Twelve pounds and under.

032 – 1. 1/2.
032 – 2. 12 to 16.
032 – 3. Seven.
032 – 4. Loin end.
032 – 5. Carving easier.

033 – 1. Slab bacon is cut into one- or two-pound pieces, or sliced and displayed in one-pound packages. Salt pork is processed in pieces or sliced for display in not more than one-pound packages.
033 – 2. a. F. Salt pork is obtained only from the belly section.
b. T.
c. T.

034 – 1. T
034 – 3 T On the 2nd day, they are sold chilled and after the second day, they are discarded
034 – 2 T Losses are not absorbed by other items in the meat department.
034 – 4. T
034 – 5. F. They should weigh from 2 to 3 pounds.
034 – 6. T

035 – 1. F. Discard any dark exposed trimmings.
035 – 2. T
035 – 3. T
035 – 4. F. It is prepared in triplicate.
035 – 5. F. Ninety percent of the value is credited.

CHAPTER 5

036 – 1. Do not stack roll stock tubes on end and do not stack roll stock cartons over 50 inches high.
036 – 2. From 35 to 50 percent and packaged from 5 to 65 percent.
036 – 3. 65°F to 75°F.
036 – 4. a. 10–S, 14.
b. 4–S or 8–S; 14 for 4–S and 16 for 8–S.
c. 2–S, 14.
d. 2, 14.
e. 1, 11.

037 – 1. Proper packaging enhances bloom and causes the product to appear more attractive and palatable.
037 – 2. Convert them to other products through reprocessing.
037 – 3. a.
(1) a.
(2) b.
(3) b.

038 – 1. (1) e.
(2) b.
(3) c.
(4) a, d.

039 – 1. By type of meat.
039 – 2. If only fluorescent lights are used, use only soft white-natural fluorescent tubes, because the color is better.

039 – 3. The oldest meat cuts are placed in the front of the display case nearest the customer.

CHAPTER 6

040 – 1. One is for quality and the other is for yield.
040 – 2. Quality indicates the tenderness, juiciness, and flavor of the lean.
040 – 3. Conformation or carcass shape.
040 – 4. Prime, choice, and USDA good by written request.
040 – 5. Yield indicates beef carcass cutability or the amount of usable meat a carcass will yield after the waste fat has been trimmed off.
040 – 6. 1.
041 – 1. a. F. Only five grades are used—prime, choice, good, standard, utility.
b. T.
c. F. Veal carcasses have a grayish pink color of lean that is very smooth and velvety in texture.
d. F. Veal and calf are graded using a composite evaluation of conformation and quality.
e. T.

042 – 1. On developmental differences in their muscular and skeletal systems.
042 – 2. The lean is light red and has a fine texture.
042 – 3. Quality and yield grades.
042 – 4. By considering the texture, firmness, and marbling when observed in a cut surface.
042 – 5. Conformation.
042 – 6. The amount of external fat, the amount of kidney and pelvic fat, the conformation grade of the lean.

043 – 1. Class and grade.
043 – 2. Observation of the muscling, firmness, and marbling in a cut surface of lean muscle. [illegible] this type of carcass is ungraded.
043 – 3. Pork yield grades are based entirely on the expected carcass yields of the ham, loin, picnic shoulder, and Boston butt.

044 – 1. A dry heat cooking method used for large, relatively tender cuts of meat.
044 – 2. The recommended cooking time plus an additional one-third to one-half of the time recommended for chilled roasts (36°F to 40°F).
044 – 3. It should be allowed to set or rest in a warm place for 15 to 20 minutes before it is carved.

045 – 1. A dry heat cooking method using direct contact of radiant heat.
045 – 2. Between 1 and 2 inches.
045 – 3. Only after the side is browned.
045 – 4. Make a small slit or cut in the steak or chop with a sharp knife.

046 – 1. a. F. Meat should be refrigerated, not frozen.
b. F. [illegible]
c. T.
d. F. Meat should be thawed at room temp.

CHAPTER 7

047 – 1. a. I
b. I
c. II
d. I
e. II

047 – 2. The [illegible] Category I operations [illegible] on the classification of the store and is normally directed by local procurement.
047 – 3. The store manager.
047 – 4. (1) Hanging [illegible] carcasses, (2) [illegible] meat, (3) grinder, 4 packaging meat, and 5 [illegible] film.
047 – 5. Surcharge receiving fund.

048 – 1. F.
048 – 2. F. Delete "and."
[illegible]
048 – 4. T.

049 – 1. The commander of AFCOMS.
049 – 2. One or more complexes within the geographical area.
049 – 3. The store manager.
049 – 4. By manpower authorities operating under Air Force directives on recommendation and advice of the store manager.

050 – 1. a. Grocery e. meat
b. Meat
c. Meat
d. Meat
050 – 2. Papaya papaya, pineapple, and fresh figs.
050 – 3. Within 24 hours.

051 – 1. In bulk.
051 – 2. At intervals not to exceed 6 days.
051 – 3. 45°F., or higher.

052 – 1. Past sales and space available.
052 – 2. Consumption data, customer preference, religious customs, holidays, season, and availability of product.
052 – 3. Only the highest quality customers will price and customer demand.
052 – 4. a. T.
b. T. supply adequate variations in thickness, sizes, and packages to customer patron requests for special cuts.
c. T. There should be a minimum of four cuts.
d. T. These items should be stocked at all times.

053 – 1. It is a procedure for establishing retail prices by predetermining the average yield of each cut of meat or poultry in relation to the average weight of the carcass, considering waste, bones, fat, and shrinkage.
053 – 2. AF Form 450, Processed Item Test.
053 – 3. Enter the invoice price of the item to be priced.

053 – 4. Subtract the weight of fat, bone, and suet from the actual amount of meat available to patrons after the item has been processed.
053 – 5. The store manager.
053 – 6. At least once a month, when significant changes occur in weight ranges, or when style or method of cutting changes for merchandising reasons.
053 – 7. To assist the meat department manager in establishing retail prices for processed meat items.

054 – 1. To insure that ground meats do not exceed the allowable fat percentage.
054 – 2. 25 percent.
054 – 3. .125 hundredths of a pound
054 – 4. A 15-minute interval.

055 – 1. Semiannual and semimonthly.
055 – 2. Semiannually—as of the close of business on the last working day of February and August. Semimonthly—on the Saturday closest to the 15th of the month and the last sales day of the calendar month.
055 – 3. Inventoried at sale price on each package and entered as single-line entries on the inventory form.
055 – 4. To permit flexibility while recovering losses or decreasing gains during subsequent evaluation periods.
055 – 5. The store manager or a designated representative.
055 – 6. Prevailing commercial prices, season and approaching holidays, demand for steaks and ground meat, and demand for roast on holidays.

056 – 1. Meat and supplies, meatcutting, wrapping, pricing, and displaying.
056 – 2. Continuously.
056 – 3. Fifty percent.
056 – 4. The supervisor.

057 – 1. Customer complaints, production charts, reports and accounting records.
057 – 2. All of them.

058 – 1. Listen carefully to what is said and then ask how you can serve them now.
058 – 2. a. T
b. F
c. T
d. F

059 – 1. a. V
b. IV
c. V
d. IV
e. V

AUSAFS.AL (830342) 200.

STOP - 1. MATCH ANSWER SHEET TO THIS EXERCISE NUMBER.
2. USE NUMBER 2 PENCIL ONLY.

EXTENSION COURSE INSTITUTE
VOLUME REVIEW EXERCISE

6125 01 01

MEATCUTTER

Carefully read the following:

DO's:

1. Check the "course," "volume," and "form" numbers from the answer sheet address tab against the "VRE answer sheet identification number" in the righthand column of the shipping list. If numbers do not match, return the answer sheet and the shipping list to ECI immediately with a note of explanation.
2. Note that item numbers on answer sheet are sequential in each column.
3. Use a medium sharp #2 black lead pencil for marking answer sheet.
4. Write the correct answer in the margin at the left of the item. (When you review for the course examination, you can cover *your* answers with a strip of paper and then check your review answers against your original choices.) After you are sure of your answers, transfer them to the answer sheet. If you *have* to change an answer on the answer sheet, be sure that the erasure is complete. Use a clean eraser. But try to avoid any erasure on the answer sheet if at all possible.
5. Take action to return entire answer sheet to ECI.
6. Keep Volume Review Exercise booklet for review and reference.
7. If *mandatorily* enrolled student, process questions or comments through your unit trainer or OJT supervisor. If *voluntarily* enrolled student, send questions or comments to ECI on ECI Form 17.

DON'Ts:

1. Don't use answer sheets other than one furnished specifically for each review exercise.
2. Don't mark on the answer sheet except to fill in marking blocks. Double marks or excessive markings which overflow marking blocks will register as errors.
3. Don't fold, spindle, staple, tape, or mutilate the answer sheet.
4. Don't use ink or any marking other than a #2 black lead pencil.

NOTE: **NUMBERED LEARNING OBJECTIVE REFERENCES ARE USED ON THE VOLUME REVIEW EXERCISE.** In parenthesis after each item number on the VRE is the *Learning Objective Number* where the answer to that item can be located. When answering the items on the VRE, refer to the *Learning Objectives* indicated by these *Numbers*. The VRE results will be sent to you on a postcard which will list the *actual* VRE *items you missed*. Go to the VRE booklet and locate the *Learning Objective Numbers* for the items missed. Go to the text and carefully review the areas covered by these references. Review the entire VRE again before you take the closed-book Course Examination.

MULTIPLE CHOICE

Note to Student: Consider all choices carefully and select the *best* answer to each question.

1. (001) Which of the following AFSCs correctly matches the given title?

   a. 61230, Subsistence Operations Specialist.
   b. 61251, Apprentice Subsistence Operations Specialist.
   c. 61270, Meat Processing Supervisor.
   d. 61299, Subsistence Operations Supervisor.

2. (002) Which of the following is not a requirement, but could be beneficial to you in your career progression?

   a. Complete this ECI course.
   b. Enroll in off-duty education courses.
   c. Perform assigned duties satisfactorily.
   d. Be recommended for upgrading by your supervisor.

3. (003) One of the duties of an AFSC 61250 is to

   a. sharpen sawblades.
   b. conduct security inspections.
   c. supervise meatcutting personnel.
   d. inspect and evaluate meat processing activities.

4. (003) Which section of the meatcutter specialty description lists mandatory knowledges?

   a. Duties and Responsibilities.
   b. Specialty Qualifications.
   c. Specialty Summary.
   d. Specialty Data.

5. (004) Which publication is the directive for commissary meat departments?

   a. AFCOMSR 145-2.
   b. AFCOMSR 145-3.
   c. AFM 146-6.
   d. AFM 39-1.

6. (004) You can locate information in AFCOMSR 145-2 by using the

   a. glossary.
   b. attachments.
   c. chapter title.
   d. table of contents.

7. (004) In AFCOMSR 145-2 the meat department is listed in

   a. Chapter 4, section c.
   b. Chapter 4, section d.
   c. Chapter 5, section c.
   d. Chapter 5, section d.

8. (005) Which of the following handtools has a wide bevel?

   a. Handsaw.
   b. Steak knife.
   c. Boning knife.
   d. Butchers steel.

9. (006) The piece of powered equipment that has a sharpening attachment is the

   a. bandsaw.
   b. meat slicer.
   c. meat grinder.
   d. meat tenderizer.

10. (006) The first step in operating a bandsaw is to

a. place the meat firmly against the gauge plate.
b. push the carriage toward the blade.
c. adjust the meat gauge plate.
d. turn on the switch.

11. (007) The meat grinder and tenderizer are located in the

a. meat wrapping room.
b. meat processing room.
c. adjacent to the restocking aisle.
d. carcass beef storage room.

12. (008) When operating powered equipment, do *not* wear

a. hard hats.
b. safety shoes.
c. safety aprons.
d. metal mesh gloves.

13. (009) To maintain proper sanitation in the meat department, the minimum temperature of water used must be

a. 140^{O} F.
b. 150^{O} F.
c. 160^{O} F.
d. 180^{O} F.

14. (009) Heavy paper or mats used on the processing area floors must be removed and the floors must be cleaned

a. daily.
b. weekly.
c. twice a week.
d. three times a week.

15. (010) A meatcutter with an ailment should

a. eat properly.
b. go home immediately.
c. report to the dispensary immediately.
d. stay out of temperature ranges from 0^{O} to 50^{O}.

16. (011) The primary purpose of veterinarian inspections is to

a. maintain high standards of sanitation for equipment and facilities.
b. insure that customers are sold only the highest quality meats.
c. maintain high standards of sanitation for meatcutters.
d. prevent the spread of germs and/or infectious diseases.

17. (011) When meat is received at the commissary, veterinarians inspect it for

a. weight and germs.
b. quality and disease.
c. cleanliness and weight.
d. condition and proper temperature.

18. (012) When receiving meat from the commissary warehouse, which copy or copies of the AF 129 must the inchecker sign?

a. only the first.
b. first and second.
c. First and third.
d. Second and third.

19. (012) All carcass meats must be

a. age graded when received.
b. 100 percent weighed when received.
c. inventoried at weights supplied by the vendor.
d. weighed, when received, at the discretion of the commissary officer.

20. (014) If a package of bacon had a code date marked Mar 16, what type of code date system is being used?

a. Quality assurance system.
b. Alpha numerical system.
c. Standard AMI system.
d. Revised AMI system.

21. (014) To insure a reasonable home storage period, almost all fresh chilled pork sausage must be delivered

a. within 72 hours after packaging to allow for rotation and sale.
b. within 10 days after packaging to allow for rotation and sale.
c. with sufficient shelf life remaining to allow for rotation and sale prior to the code date.
d. with sufficient shelf life remaining to allow for rotation and sale prior to the pull date.

22. (015) Thermometers in refrigerated areas are located at what height above the floor?

a. 2 feet.
b. 4 feet.
c. 5 feet.
d. 6 feet.

23. (016) What is the approximate keeping time for a frozen beef carcass?

a. 10 months.
b. 8 months.
c. 6 months.
d. 4 months.

24. (016) Which of the following *does not* affect the keeping time of cured or smoked meat?

a. Type of cure.
b. Amount of fat.
c. Method of packaging.
d. Length of smoking period.

25. (017) When making a charge sale, who reviews and assigns a voucher number to the AF Form 287?

a. Store manager.
b. Drawing representative.
c. Meat department manager.
d. Store administrative clerk.

26. (018) Steer and heifer meat differs in that steers have a greater percentage of

a. marbling.
b. edible meat.
c. purplish red meat.
d. white and brittle bones.

27. (018) The presence of a *break joint* is a characteristic of a

a. beef carcass.
b. veal carcass.
c. pork carcass.
d. lamb carcass.

28. (019) Which bone is used as a guide when processing chuck?

a. Aitch.
b. Blade.
c. Pelvic.
d. Foreshank.

29. (020) The yield from the heel of round is correctly identified as

a. ground beef, stew beef, and roast.
b. ground beef, club steak, and roast.
c. swiss steak, roast, and ground beef.
d. sirloin tip, porterhouse, and T-bone steaks.

30. (020) The yield from the beef neck area is correctly identified as

a. ground beef, stew beef, and pin bone steaks.
b. short ribs, ground beef, and cube steaks.
c. ground beef, stew beef, and cube steaks.
d. ground beef, stew beef, and boneless roast.

31. (021) The full loin of a beef hindquarter is removed using which of the following as pivot points for the cutting line?

a. Pinbone and rump knucklebone.
b. Aitch bone and rump knucklebone.
c. Third sacral vertebra and rump knucklebone.
d. Fifth sacral vertebra and rump knucklebone.

32. (022) The retail cut that has grains running lengthwise is the

a. flank steak.
b. round steak.
c. T-bone steak.
d. sirloin tip steak.

33. (022) The silver strip is located between the

a. eye and top round.
b. top and bottom round.
c. eye and bottom round.
d. sirloin tip and bottom round.

34. (022) Sirloin is separated from the full loin by cutting parallel with the face of the sirloin end to the

a. chine bone.
b. backbone.
c. hipbone.
d. legbone.

35. (022) Before cutting the short loin of beef into steaks, remove excess flank meat and remove any tails that exceed

a. 1 inch.
b. 3/4 inch.
c. 1/2 inch.
d. 1/4 inch.

36. (023) The wing section of a beef forequarter is separated from the crosscut section between the

a. fourth and fifth ribs.
b. fifth and sixth ribs.
c. sixth and seventh ribs.
d. seventh and eighth ribs.

37. (023) Before processing the beef rib into retail cuts, remove the chine bone and trim the

a. backbone.
b. backstrap.
c. knucklebones.
d. featherbones.

38. (024) To avoid a large bone in the first beef arm roast, remove the foreshank from the crosscut section

a. one-half inch below the knuckle on the shoulder side.
b. one-half inch above the knuckle on the shoulder side.
c. one inch above the knuckle on the shoulder side.
d. one inch below the knuckle on the shoulder side.

39. (024) When processing the chuck section, beef chuck blade roast is cut from the

a. eighth and ninth ribs.
b. sixth and seventh ribs.
c. fourth rib.
d. first, second, and third ribs.

40. (025) The fat on fabricated, subprimal cuts of beef is normally trimmed down to

a. one-half inch.
b. one inch.
c. one and one-half inch.
d. two inches.

41. (025) The portion of the primal round that is underneath the round bone is the

a. sirloin butt.
b. sirloin end.
c. sirloin tip.
d. blade chuck.

42. (026) A major difference between veal and beef is that

a. veal carcass is much longer than beef carcass.
b. the veal hindquarter is separated behind the last rib.
c. veal is received in quarters while beef is received in whole sides.
d. two major cuts are made from the veal leg, and one major cut is made from the corresponding beef area.

43. (027) In veal forequarter processing, the chine bone is used as a measuring point for separating the

a. rib and naval from the shoulder.
b. shank from the shoulder.
c. breast from the rib.
d. three rib corner.

44. (028) The flank is removed from the veal hindquarter

a. 2 inches from the chine bone.
b. 4 inches from the chine bone.
c. 6 inches from the chine bone.
d. 8 inches from the chine bone.

45. (028) Veal cutlets are processed from the

a. sirloin.
b. round.
c. loin.
d. rump.

46. (029) When "saddles" are made in lamb carcasses, the forequarters or hindquarters are left joined at the

a. break joint.
b. hindshank.
c. shoulder.
d. backbone.

47. (030) Before processing lamb rib,

a. remove the feather bones.
b. remove the lamb fell.
c. score the rib bones.
d. remove the chine bone.

48. (030) One of the ways to merchandise lamb neck is as

a. lamb stew.
b. mock duck.
c. lamb chops.
d. lamb roast.

49. (030) American leg of lamb carving procedures differ from French leg of lamb carving procedures in that American carvers

a. do not remove the excess fat.
b. merchandise the whole leg of lamb.
c. saw through the backbone every 1/2 inch for easier carving.
d. remove the meat from the shankbone and scrape the bone free of meat.

50. (031) Most hams weighing more than 12 pounds are

a. sold whole.
b. sold halved.
c. sold halved after slices are removed.
d. processed into breakfast slices, ham hocks, center slices, and seasoning pieces.

51. (032) Which type of pork chops are most desirable?

a. End chops.
b. Rib chops.
c. Blade chops.
d. Center-cut chops.

52. (033) One similarity in processing slab bacon and salt pork is that both may be

a. sliced and merchandised in one or two pound packages.
b. sliced and merchandised in two pound packages.
c. sliced and merchandised in one pound packages.
d. cut into one or two pound pieces for display.

53. (034) What is the minimum internal temperature for barbecuing pork?

a. 165^{O}.
b. 170^{O}.
c. 175^{O}.
d. 185^{O}.

54. (035) What is the preferable method for disposing of unusable bones and fat in the meat department?

a. Dispose of them yourself.
b. Contact sanitary fill personnel.
c. Try to obtain a contract to sell them.
d. Obtain detail personnel to dispose of them.

55. (036) Which of the following identifies the proper conditions for storing wrapping film?

a. A temperature between 65^{O} to 75^{O} F for storing all types of film.
b. Film stored in a dry place where it will receive direct sunlight.
c. A relative humidity of 35 to 50 percent for storing packages.
d. Roll tubes stacked on end.

56. (036) One characteristic of film is that it

a. contains no elasticity.
b. is coated on one side.
c. must be sealed at a very high temperature.
d. must be sealed at the lowest possible temperature.

57. (037) When cuts of meats have lost their eye appeal,

a. rewrap them immediately.
b. dispose of the product immediately.
c. convert them to other products through reprocessing.
d. have the veterinarian check the product for spoilage.

58. (038) Scaling systems must be calibrated at least

a. once a year.
b. twice annually.
c. once a month.
d. once every quarter.

59. (039) Which of the following techniques is most desirable for use in displaying meats?

a. A front loading case.
b. Hand printed display signs.
c. Meat items arranged by group type.
d. Soft natural subdued blue lighting.

60. (039) When stocking meat in a self-service display case from behind, you should

a. place meats so that the oldest cuts are away from the clerk and toward the front of the display case.
b. place meats so that the oldest cuts are nearest the clerk and toward the rear of the display case.
c. stock smoked meat and sausage on the bottom shelf.
d. stock meat in a single layer.

61. (040) Which type of grading system uses the marbling and maturity of the beef as major evaluating factors?

a. Yield grading.
b. Quality grading.
c. Standard grading.
d. Commercial grading.

62. (040) Commissary meat departments buy

a. prime, good, and standard grades.
b. prime, choice, and USDA good grades.
c. prime, standard, and commercial grades.
d. prime, commercial, and USDA good grades.

63. (041) Differences between veal, calf, and beef carcasses are made primarily on the basis of the

a. bone shape.
b. carcass shape.
c. color of the lean.
d. degree of marbling.

64. (042) Lamb carcasses have

a. dark, red, coarse texture of lean.
b. wide and moderately flat rib bones.
c. "spool" joints on their front shanks.
d. slightly pink, coarse texture of lean.

65. (042) Which of the following is one of the factors used to determine the yield grade of lamb or mutton?

a. Observing the muscular and skeletal system.
b. Marbling when observed in a cut surface.
c. Observing the amount of feathering.
d. The conformation grade of the legs.

66. (043) The USDA provides for pork to be segregated according to

a. class and grade.
b. quality and yield.
c. age of the animal at the time the animal is slaughtered.
d. quality indicating characteristics that are evident in pork carcasses.

67. (043) The yield grade of pork is based entirely on

a. whether the carcass is a gilt or barrow.
b. the characteristics of a cut surface of a major muscle.
c. the lean quality of the loin eye muscle of the 10th rib.
d. the expected carcass yields of the ham, loin, picnic shoulder, and Boston butt.

68. (044) Once a roast has finished cooking, it should be allowed to set for what period of time before it is carved?

a. 10-15 mins.
b. 15-20 mins.
c. 20-25 mins.
d. 25-30 mins.

69. (045) When broiling meats in an oven,

a. turn the meat continuously when cooking.
b. determine the doneness by checking how brown the meat is.
c. allow the meat to set for 10 to 20 minutes before serving.
d. place the meat in a pan three to five inches from the heat.

70. (046) Meats cooked in liquids should be

a. cooked at or above the boiling point.
b. placed in a gravy for added flavor.
c. simmered between 185° to 208° F.
d. small cuts of meat.

71. (047) All of the following items are procured as operating supplies *except*

a. pans and racks.
b. wrapping films.
c. packaging trays.
d. handtools.

72. (048) In the CONUS, an operating level for each supply item should be established a consumption period that will normally not exceed

a. two weeks.
b. 20 days.
c. 30 days.
d. 60 days.

73. (049) To whom is each commissary (single) officer responsible?

a. The regional commander.
b. The complex officer.
c. AFCOMS commander.
d. AFESA commander.

74. (050) Which of the following statements concerning pretenderized beef is correct?

a. The tenderizing action takes place before the animal is slaughtered.
b. Commissaries cannot stipulate the type of tenderizing process desired.
c. Commissaries may purchase name brand tenderized beef.
d. Three types of tenderizing processes are used.

75. (051) Deli display cases should be unloaded and cleaned

a. at intervals not to exceed six days.
b. at least quarterly.
c. at least once a month.
d. every two weeks.

76. (052) Which of the following items are *not* required to be stocked in the meat department at all times?

a. Chicken.
b. Beef ribs.
c. Sirloin steak.
d. Pork chop (loin, rib).

77. (053) Shrinkage is a variable percentage of unavoidable loss. What percentage of initial markup is required to cover these losses?

a. 1 1/2 to 2 percent.
b. 2 1/2 to 3 percent.
c. 3 1/2 to 4 percent.
d. 4 1/2 to 5 percent.

78. (053) To get your value when processing a cutting test, values of fat, bone, and suet is figured at what percent of the contract price?

a. 80.
b. 90.
c. 95.
d. 100.

79. (054) The amount of ground beef that is placed under the heating element when performing a fat percentage test is

a. three ounces.
b. 18 hundreds of a pound.
c. 15 hundreds of a pound.
d. 13 hundreds of a pound.

80. (055) What type of inventory is taken when directed by HQ AFCOMS?

a. Management inventory.
b. Semimonthly inventory.
c. Semiannual inventory.
d. Monthly inventory.

81. (055) What is the maximum percentage of gain or loss authorized on semiannual inventories?

a. 2 percent.
b. 1 percent.
c. 1/2 of one percent.
d. 0.1 of one percent.

82. (056) The two most important reasons for conducting supervisory inspections are to

a. check meat processing and control refrigeration temperatures.
b. correct sanitation problems and insure proper wrapping of meat.
c. correct substandard conditions and evaluate the department's operation.
d. check the condition of meats and the cleanliness of meatcutters.

83. (057) Which of the following factors are significantly important when evaluating the effectiveness of the meat department?

a. Production charts and reports.
b. Customer complaints.
c. Accounting records.
d. All of the above factors.

84. (058) If a customer complains that some meat he or she bought was tough, you would best resolve the problem by

a. calmly explaining that the commissary sells only the best stew meat.
b. calmly cutting new stew meat for him or her.
c. asking how you can serve him or her now.
d. asking how the meat was cooked.

85. (059) The USAF Graduate Evaluation Program serves as a source of information for determining the

a. extent to which acquired skills are used by recent graduates.
b. need for further evaluation of training problems identified by the voluntarily submitted comments of graduates.
c. need for special training to increase the knowledge of instructors.
d. extent to which knowledge attained by recent graduates is used by them to innovate in solving problems on the job.

END OF EXERCISE

The remaining questions (125-135) are not part of the Volume Review Exercise (VRE). These questions are a voluntary ATC/ECI survey. Using a number 2 pencil, indicate what you consider to be the appropriate response to each survey question on your answer sheet (ECI Form 35), beginning with answer number 125. Do not respond to questions that do not apply to you. Your cooperation in completing this survey is greatly appreciated by ATC and ECI. (AUSCN 100)

PRIVACY ACT STATEMENT

A. Authority: 5 U.S.C. 301, *Departmental Regulations*

B. Principal Purpose: To gather preliminary data evaluating the ATC/ECI Career Development Course (CDC) Program.

C. Routine Uses: Determine the requirement for comprehensive evaluations in support of CDC program improvement.

D. Whether Disclosure is Mandatory or Voluntary: Participation in this survey is entirely voluntary.

E. Effect on the Individual of not Providing Information: No adverse action will be taken against any individual who elects not to participate in any or all parts of this survey.

QUESTIONS

125. If you have contacted ECI for any reason during your enrollment, how would you describe the service provided to you?

a. Excellent.
b. Satisfactory.
c. Unsatisfactory.
d. Did not contact ECI.

126. My ECI course materials were received within a reasonable period of time.

a. Strongly agree.
b. Agree.
c. Disagree.
d. Strongly disagree.

127. The condition of the course materials I received from ECI was:

a. A complete set of well-packaged materials.
b. An incomplete set of well-packaged materials.
c. A complete set of poorly packaged materials.
d. An incomplete set of poorly packaged materials.

128. The reading level of the material in the course was too difficult for me.

a. Strongly agree.
b. Agree.
c. Disagree.
d. Strongly disagree.

129. The technical material in the course was too difficult for me at my present level of training.

a. Strongly agree.
b. Agree.
c. Disagree.
d. Strongly disagree.

130. The illustrations in the course helped clarify the information for me.

a. Strongly agree.
b. Agree.
c. Disagree.
d. Strongly disagree.

131. Approximately how much information in the course provides general information about your AFSC?

a. Between 80 and 99%.
b. Between 60 and 79%.
c. Between 40 and 59%.
d. Between 20 and 39%.

132. Approximately how much information in this course was current?

a. Between 80 and 99%.
b. Between 60 and 79%.
c. Between 40 and 59%.
d. Between 20 and 39%.

133. The format of the text (objective followed by narrative and exercises) helped me study.

a. Strongly agree.
b. Agree.
c. Disagree.
d. Strongly disagree.

134. The volume review exercise(s) helped me review information in the course.

a. Strongly agree.
b. Agree.
c. Disagree.
d. Strongly disagree.

135. Check the rating which most nearly describes the usefulness of the information in this CDC in your upgrade training program.

a. Excellent.
b. Satisfactory.
c. Marginal.
d. Unsatisfactory.

NOTE: If you know this CDC contains outdated information or does not provide the knowledge that the current specialty training standard requires you have for upgrade training, contact your OJT advisor and fill out an AF Form 1284, Training Quality Report.

STUDENT REQUEST FOR ASSISTANCE

PRIVACY ACT STATEMENT

AUTHORITY: 10 USC 8012 and EO 9397. PRINCIPAL PURPOSES: To provide student assistance as requested by individual students. ROUTINE USES: This form is shipped with ECI course package. It is utilized by the student, as needed, to place an inquiry with ECI. DISCLOSURE: Voluntary. The information requested on this form is needed for expeditious handling of the student's need. Failure to provide all information would result in slower action or inability to provide assistance to the student.

SECTION I: CORRECTED OR LATEST ENROLLMENT DATA: *(Mail to: ECI, Gunter AFS AL 36118)*

1. THIS REQUEST CONCERNS COURSE (1 - 6)	2. TODAY'S DATE	3. ENROLLMENT DATE	4. AUTOVON NUMBER

5. SOCIAL SECURITY NUMBER (7 - 15)	6. GRADE/RANK	7. NAME *(First initial, second initial, last name)*
___-___-____		(17) (18) (19-32)

8. ADDRESS *(OJT Enrollees – Address of unit training office with zip code. All others – current mailing address with zip code.)*	(33-53)
	(54-75)

9. NAME OF BASE OR INSTALLATION IF NOT SHOWN ABOVE	10. TEST CONTROL OFFICE ZIP CODE/SHRED (33 - 38)

SECTION II: REQUEST FOR MATERIALS, RECORDS, OR SERVICE

(Place an 'X' through number in box to left of service requested)

1	Request address change as indicated in Section I.	16	
2	Request Test Control Office change as indicated in Section I.	G	33
3	Request name change/correction (Provide Old or Incorrect data)	K	Vol 33 - 39 GR 36 - 38
4	Request Grade/Rank change/correction.	M	33 - 34 35 - 40
5	Correct SSAN. (List incorrect SSAN here) (Correct SSAN should be shown in Section I)	N	33 - 38
6	Extend course completion date. (Justify in REMARKS)	P	Vol 32 - 35 TC 36 - 37
7	Request enrollment cancellation.	Q	33 - 34 Volume 35 - 41
8	Send VRE answer sheets for Vol(s): 1 2 3 4 5 6 7 8 9 Originals were: ☐ Not received ☐ Lost ☐ Misused	16 1	39 - 42
9	Send course materials. (Specify in REMARKS) ☐ Not received ☐ Lost ☐ Damaged	2	39 - 42
10	Course exam not yet received. Final VRE submitted for grading on _____ (date).	3	39 - 42
11	Results for VRE Vol(s) 1 2 3 4 5 6 7 8 9 not yet received. Answer sheet(s) submitted _____ (date).	15	
12	Results for CE not yet received. Answer sheet submitted to ECI on _____ (date).		
13	Previous inquiry (☐ ECI Fm 17, ☐ Ltr, ☐ Msg) sent to ECI on _____ (date).		
14	Give instructional assistance as requested on reverse.		
15	Other (Explain fully in REMARKS)		

REMARKS *(Continue on Reverse)*

OJT STUDENTS must have their OJT Administrator certify this request.	I certify that the information on this form is accurate and that this request cannot be answered at this station. *(Signature)*
ALL OTHER STUDENTS may certify their own requests.	

ECI FORM 17 OCT 82 (PREVIOUS EDITIONS MAY BE USED)

SECTION III: REQUEST FOR INSTRUCTOR ASSISTANCE

NOTE: Questions or comments relating to the accuracy or currency of subject matter should be forwarded directly to preparing agency. For an immediate response to these questions, call or write the course author directly, using the AUTOVON number or address in the preface of each volume. All other inquiries concerning the course should be forwarded to ECI.

VRE Item Questioned:

Course No _____

Volume No _____

VRE Form No _____

VRE Item No _____

Answer You Chose _____ (Letter)

Has VRE Answer Sheet been submitted for grading?

☐ Yes ☐ No

REFERENCE

(Textual reference for the answer I chose can be found as shown below)

In Volume No _____

On Page No _____

In ☐ left ☐ right column

Lines ____ Through ____

MY QUESTION IS:

REMARKS

ADDITIONAL FORMS 17 available from trainers, OJT and Education Offices, and ECI. Course workbooks have a Form 17 printed on the last page.